Committee for Risk Assessment

RAC

Annex 2

Response to comments document (RCOM)

to the Opinion proposing harmonised classification and labelling at EU level of

Sodium peroxometaborate

EC Number: 231-556-4
CAS Number: 7632-04-4

CLH-O-0000007160-85-01/F

Adopted

15 September 2022

ANNEX 2 - COMMENTS AND RESPONSE TO COMMENTS ON CLH PROPOSAL ON SODIUM PEROXOMETABORATE

COMMENTS AND RESPONSE TO COMMENTS ON CLH: PROPOSAL AND JUSTIFICATION

Comments provided during consultation are made available in the table below as submitted through the web form. Any attachments received are referred to in this table and listed underneath, or have been copied directly into the table.

All comments and attachments including confidential information received during the consultation have been provided in full to the dossier submitter (Member State Competent Authority), the Committees and to the European Commission. Non-confidential attachments that have not been copied into the table directly are published after the consultation and are also published together with the opinion (after adoption) on ECHA's website. Dossier submitters who are manufacturers, importers or downstream users, will only receive the comments and non-confidential attachments, and not the confidential information received from other parties. Journal articles are not confidential; however they are not published on the website due to Intellectual Property Rights.

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Substance name: Sodium peroxometaborate
EC number: 231-556-4
CAS number: 7632-04-4
Dossier submitter: Sweden

GENERAL COMMENTS

Date	Country	Organisation	Type of Organisation	Comment number
19.01.2022	Germany		MemberState	1
Comment received				
No information on the substance composition are given in sections 1.1 (table 1) and 1.2 (table 2). It is solely mentioned, that the concentration is unknown as the substance is not registered. Furthermore, no physical and chemical properties are given. Solely the appearance and the two types of sodium per(oxo)borates are discussed. The DE CA supports to merge the existing Annex VI entries 005-017-00-7 and 005-017-01-4 and remove sodium perborate (EC no. 239-172-9; CAS no. 15120-21-5) and sodium peroxoborate. Sodium peroxometaborate differs from the dimeric cyclic structures of the other sodium per(oxo)borates and has different ATE values for acute oral and inhalation toxicity from the respective ATE values of sodium perborate. The DE CA proposes to add "dusts or mists" in column "Specific Conc. Limits, M-factors and ATEs" resulting in the following entry: "Inhalation: ATE = 0.62 mg/L (dusts or mists)". Furthermore, the DE CA appreciates to reconsider the ATE calculation for acute oral toxicity (see specific comment in section acute oral toxicity).				
Dossier Submitter's Response				
Thank you for supporting to merge the existing Annex VI entries 005-017-00-7 and 005-017-01-4 and to remove sodium perborate (EC no. 239-172-9; CAS no. 15120-21-5) and sodium peroxoborate. **Substance composition in Table 1 and Table 2** We have not found any reliable information on the composition of sodium peroxometaborate (CAS 7632-04-4) with regards to impuritites or additives since it does not have a REACH registration. The chemical suppliers of this CAS number report purities of > 95%. In the Annex XV Report for the identification of sodium peroxometaborate as SVHC (2014) the substance is reported as an UVCB. The following explanation is also given: *The molecular and structural information provided here is theoretical and the*				

information in the literature indicates that the substance is not well-defined. It is supposed to consist of sodium borate and a boron oxygen radical. Note: Ullmann specifies that the substance can be produced by the "dehydration" of the dimeric salts commonly referred to as the sodium perborate monohydrate or tetrahydrate. This reference to "dehydration" may be confusing as chemical transformations other than crystalline water removal are involved.

Physicochemical properties

There is only a Reach registration available for Perboric acid, sodium salt, EC number: 234-390-0, CAS number: 11138-47-9 where there is some information on the physciochemical properties of PBS-1 and PBS-4. There is also some information from the *SCCS Opinion on sodium perborate and perboric acid* (2010) and the *European Risk Assessment Report on perboric acid, sodium salt (CAS 11138-47-9)*(2007) (both refences included in the CLH-reports) on the per(oxo)borates, including sodium peroxometaborate. The data, when found in all three information sources, appears to be consistent. Please see compiled relevant information on physicochemical properties of sodium peroxometaborate, PBS-1 and PBS-4 in the table below.

Substance name	Sodium peroxometaborate	perboric acid, sodium salt [1]; perboric acid, sodium salt, monohydrate [2]; perboric acid (HBO(O2)), sodium salt, monohydrate; sodium peroxoborate [3]; sodium perborate [4]	perboric acid (H3BO2(O2)), monosodium salt trihydrate [1]; perboric acid, sodium salt, tetrahydrate [2]; perboric acid (HBO(O2)), sodium salt, tetrahydrate; sodium peroxoborate, hexahydrate [3]
CAS number	7632-04-4	11138-47-9 [1]; 12040-72-1 [2]; 10332-33-9 [3]; 15120-21-5 [4]	13517-20-9 [1]; 37244-98-7 [2]; 10486-00-7 [3]
EC number	231-556-4	234-390-0 [1]; 234-390-0 [2]; 239-172-9 [4]	239-172-9 [1]; 234-390-0 [2]
Molecular formula	NaBO3	B2H4O8Na2	B2H4O8Na2.6H2O
Molecular weight	81.8 g/mol	199.6 g/mol	307.6 g/mol
Boron content	13,2%	10,8%	7,0%
Physical form	Solid white amorphous powder	Solid white crystal	Solid white crystal
Melting point	63 °C	Decompose >50 - >180°C	Ca 60-65,5 °C
Boiling point	no information available	decomposition	decomposition
Water solubility	21,5 g/L	15-16 g/L	23 g/L
Dissociation constant	Not applicable due to decomposition	Not applicable due to decomposition	Not applicable due to decomposition
Partition coefficient	no information available	Not applicable (analytical difficulties)	Not applicable (analytical difficulties)

Table 5
We agree with the DE CA proposal to add "dusts or mists" in column "Specific Conc. Limits, M-factors and ATEs" resulting in the following entry: "Inhalation: ATE = 0.62 mg/L (dusts or mists)".

ATE calculation for acute oral toxicity
Please see response to comment no. 5.

RAC's response
RAC thanks the Dossier Submitter for providing the phys chem properties of the substances. The adapted Table from the Annex is included in the draft opinion.

Date	Country	Organisation	Type of Organisation	Comment number
20.01.2022	France		MemberState	2
Comment received				
In annex VI of CLP, sodium peroxometaborate shares the entries 005-017-00-7 and 005-017-01-4 with sodium perborate. FR agrees that sodium peroxometaborate should be put in a separate entry as it is a not well-defined substance and it differs with the dimeric structure of the other per(oxo)borates and because of the proposed ATE established for acute oral and inhalation toxicity which are different from the respective ATE values of sodium perborate.				
Dossier Submitter's Response				
Thank you for your support.				
RAC's response				
No further comment.				

TOXICITY TO REPRODUCTION

Date	Country	Organisation	Type of Organisation	Comment number
19.01.2022	Germany		MemberState	3
Comment received				
Sexual function and fertility The DE CA agrees with the proposed classification in Category 1B for adverse effects on fertility based on a weight-of-evidence approach including read-across data on boric acid, borate salts and PBS-4. Data provide clear evidence of an adverse effect on sexual function and fertility in the absence of other toxic effects. Boric acid, borates already bear a harmonised classification as Repr. 1B; H360FD. Classification of sodium peroxometaborate as Repr. 1B, H360F is warranted. Due to the derived ED10 (fertility) = 135 mg/kg bw/d (corrected for B content) in accordance with the Guidance on the application of CLP criteria (2017), sodium peroxometaborate falls within the range of the medium potency group, for which the GCL of 0.3% w/w should apply. Withdrawal of the SCL for sexual function and fertility is warranted. Developmental Toxicity Sodium peroxometaborate has a harmonised classification as Repr. 1B; H360D based on one PNDT study of PBS-4 in rat. The DE CA agrees not to change the classification as proposed.				

ED10-values, based on developmental effects of PBS-4 and determined via linear interpolation of available doses, were all > 4 mg B/kg bw/d, and < 400 mg B/kg bw/d, thus within the range for the medium potency group of Category 1. Therefore, the GCL of 0.3% w/w should apply. The DE CA agrees with the withdrawal of the SCL for developmental toxicity.

Lactation
The DE CA agrees that classification of sodium peroxometaborate for adverse effects on or via lactation is not warranted.

Dossier Submitter's Response
Thank for your support.
RAC's response
RAC agrees.

Date	Country	Organisation	Type of Organisation	Comment number
20.01.2022	France		MemberState	4

Comment received

Sodium peroxometaborate has a harmonised classification as toxic to reproduction for developmental effects and fertility effects: Repr. 1B (H360Df). Moreover, it has SCLs for adverse effects on sexual function and fertility and for adverse effects on the development of the offspring (at 9% and 6-9.5%, respectively) that were established based on the toxicity of the boron moiety (B) using an approach proposed by BauA (1998). This method has since been reassessed and the RAC removed the SCLs based from it and concluded on the harmonisation of GCL 0.3% w/w for boric acid and six other sodium borates that have a harmonised classification as Repr. 1B in 2019.

FR agrees with the classification proposed and comes to the same conclusion about the allocation of potency of sodium peroxometaborate as medium, GCL of 0.3% for fertility based on read-across with boric acid and development, based on read across of data from developmental toxicity studies conducted with PBS-4.

Page 56, table 32: we cannot find the same ED10 for the developmental effects of PBS-4 presented in the table 32. Indeed, by applying the method presented in the CLP guidance (2017) page 409, section 3.7.2.6.3.3. we obtain different results :
Live foetus weight : ED10 = 271.72 mg PBS-4/kg bw/day
Litter weight : ED10 = 202.68 mg PBS-4/kg bw/day

Could you please re-check your calculations? These results do not change the allocation of potency expected for sodium peroxometaborate.

Dossier Submitter's Response

Thank you for your support.

We agree that there are mistakes regarding ED10 in table 32 (please see corrections in the table below). As you point out, the corrected ED10 values (calculated according to CLP guidance (2017)) do not change the potency group allocation of sodium peroxometaborate.

Developmental effects	Dose levels (mg PBS-4/kg bw/day)				ED10 (linear interpolation of available doses)		Allocation of potency group*
	0	100	300	1000	(mg PBS-4/kg bw/day)	mg B/kg bw/day	
Live foetus weight (g)	3.69	3.57	3.28	2.4	~~127.5~~ 271.7	~~9~~ 19	Medium, GCL of 0.3%
Litter weight (g)	54.97	52.62	46.49	32.52	~~197.2~~ 202.7	~~13.8~~ 14.2	Medium, GCL of 0.3%
Post-implantation loss (%)	2.91	2.39	13.54	15.2	288.8	20.2	Medium, GCL of 0.3%
LOAEL for developmental effects					300	21	Medium, GCL of 0.3%

RAC's response

RAC thanks the Dossier Submitter for correcting the ED10s.

OTHER HAZARDS AND ENDPOINTS – Acute Toxicity

Date	Country	Organisation	Type of Organisation	Comment number
19.01.2022	Germany		MemberState	5

Comment received

Acute oral toxicity
The DE CA agrees with the removal of the asterisk indicating minimum classification and the inclusion of an ATE.
The proposed ATE of 918 mg/kg bw/d was calculated based on the lowest male/female LD50 for PBS-1 (1120 mg/kg bw), due to the lack of studies with sodium peroxometaborate. However, the proposed ATE in the CLH report of PBS-1 is based on the lowest LD50 of 890 mg/kg bw observed in female rats. Therefore, it is not plausible why the male/female LD50 for PBS-1 instead of the female LD50 for PBS-1 (1120 mg/kg bw) was used here to calculate an ATE for sodium peroxometaborate. It is appreciated to reconsider the ATE calculation.
Nevertheless, the criteria for classification as Acute Tox. 4, H302 are met for sodium peroxometaborate.
Acute dermal toxicity
The DS´s proposal of no classification for acute dermal toxicity for sodium peroxometaborate is supported.
Acute inhalation toxicity
The DE CA agrees with the removal of the asterisk indicating minimum classification and the cut-off values. The criteria for classification as Acute Tox. 3, H331 are met for sodium peroxometaborate. It is supported to include an ATE of 0.62 mg/L, which was calculated based on the lowest male LC50 for PBS-4 as proposed. The DE CA proposes to add "dusts or mists" resulting in "Acute Tox. 3, H331, inhalation: ATE = 0.62 mg/L (dusts or mists)".

Dossier Submitter's Response

Thank you for your support.

Acute oral toxicity
We agree that there is in an inconsistency using the lowest (female) LD50 for ATE calculations for PBS-1 but using male/female LD50 for ATE calculations for sodium peroxometaborate. There is no justification for this onconsistency and therefore the ATE should be 730 mg/kg bw for sodium peroxometaborate based on the lowest (female) LD50 for PBS-1.

Acute inhalation toxicity
We agree to add "dusts or mists" resulting in "Acute Tox. 3, H331, inhalation: ATE = 0.62 mg/L (dusts or mists)".

RAC's response

No further comments.

Date	Country	Organisation	Type of Organisation	Comment number
20.01.2022	France		MemberState	6

Comment received

Acute toxicity:
Acute inhalation toxicity: We agree that the use of the thoracic fraction approach is not the most appropriate for classification, as the OECD technical guidelines for acute inhalation toxicity recommend using aerosols with a mass median aerodynamic diameter (MMAD) ≤4 µm and a geometric standard deviation (GSD) in the range of 1.0 to 3.0, so particles can reach all regions of the respiratory tract. Moreover studies show that hydrogen peroxide released by hydrolysis contributes mainly of the acute toxicity of per(oxo)borates. Therefore, the acute toxicity of per(oxo)borates would not be due to the particle diameter size. FR agrees that the cut-off value of 50 µm for particle size should be removed.
Given that hydrogen peroxide contribute mainly of the acute toxicity of per(oxo)borates, FR agrees with the reasoning to link hydrogen peroxide content and acute toxicity for the classification, as no study conducted on sodium peroxometaborate is available. Consequently, the proposed classification as Acute Tox.3, H331 and the ATE of 0.62 mg/L is supported.

Acute oral toxicity: FR agrees with the reasoning to link hydrogen peroxide content and acute toxicity for the classification, as no study conducted on sodium peroxometaborate is available. Consequently, the proposed classification as Acute Tox.3, H331 and the ATE of 918 mg/kg bw/day is supported.

Dossier Submitter's Response

Thank you for your support.

RAC's response

No further comments.