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Background

The HELCOM Working Groups were tasked to consider tentative needs for rephrasing of existing HELCOM actions from the Baltic Sea Action Plan and Ministerial Declarations 2010 and 2013 that are not likely implemented by 2021. In accordance with the Strategic Plan for the BSAP update, these actions will be transferred to the updated BSAP as they are, or they will be rephrased as found needed by the Working Groups i.e. to update target years, to ensure that they are up to date with current HELCOM work, or to clarify the actions.

The Pressure group has discussed the rephrasing of actions in PRESSURE 9-2018, PRESSURE 10-2019, PRESSURE 10a-2019, PRESSURE 11-2019, PRESSURE 11a-2020 and PRESSURE 12-2020. PRESSURE 12-2020 agreed on the tentative formulations for some of the actions to be included in the updated BSAP.

The attached document contains the rephrased actions that were yet not agreed at PRESSURE 12-2020 including updated proposals and comments received after PRESSURE 12-2020 by Denmark and Poland. The comments by Poland are included as Annex 1. For the existing action “Address the need for additional measures within transportation, combustion and agriculture (as the three major sources of atmospheric emissions of nitrogen these sectors) with the aim to ensure a Baltic-wide application of uniform standards” that is also to be considered the Agri group in AGRI 9a-2020 on 14 May, the comments by the Agri group (DK, EE and BFFE) are included.

Action requested

The Meeting is invited to agree on the tentative formulations for actions to be included in the updated BSAP.

Rephrasing of HELCOM actions

Rephrasing of existing actions

Theme: Eutrophication

Existing action	Comments by PRESSURE 12-2020 and comments received after PRESSURE 12-2020	Proposed formulation for updated BSAP	Explanation
<p>Origin: MD 2010) Implementation; National Status: Partly accomplished (8/9 countries)</p> <p>(Considering also overlapping actions:</p> <ul style="list-style-type: none"> - Encourage voluntary use of P-free dishwasher detergents (MD 2010) - RECOMMENDS to the Governments of the Contracting States to the Helsinki Convention to the further investigations on alternative builders, especially on their use and environmental effects, be carried out. (HELCOM Recommendation 28E-7)) 	<p>Comments by PRESSURE 12-2020:</p> <p>Denmark and Sweden need time or further consideration of the proposal by 8 May.</p> <p>Comments after PRESSURE 12-2020:</p> <p>DK: Unfortunately, we haven't been able to do the necessary national coordination for this proposal by the given time. We will do our best to get back with an official response at the meeting next week. However, we would like to know what is meant by further reducing P-discharges from sewage treatment plants, and will such new action be submitted in a synopsis?</p> <p>PL: Please see Polish comments in Annex 1.</p>	<p>Lead country: Germany</p> <p><i>Target the elimination of phosphorus in laundry detergents for consumer use as soon as possible, but not later than by 2015</i></p> <p><i>Undertake efforts to target the elimination of phosphorus in detergents for industrial & institutional use, in particular for institutional use of laundry and dishwasher detergents in compliance with the best available technique [no later than by 2030]</i></p> <p><i>By 2025, develop and publish a HELCOM progress report about alternative builder, especially on their use, environmental effects and effectiveness.</i></p>	<p>Rephrasing not needed for the existing action "Target the elimination...". Will be kept in the updated BSAP if Russia has not implemented this action by 2020.</p> <p>Note that for EU Member States the use of P-free dishwater detergents for consumer use is regulated since 1st of January 2017. Therefore, laundry and dishwasher detergents for consumer use are regulated.</p> <p>Germany proposes that HELCOM undertakes action concerning phosphorus in detergents for industrial & institutional use, in particular for institutional use of laundry and dishwasher detergents for</p> <p>Germany proposes to apply the best available technology concerning phosphorus in laundry and dishwasher detergents for industrial and institutional use. However, the question arises how BAT is determined, since no BREFs (EU Best Available technique reference documents) exist. Germany has already addressed this subject in a study but the outcome was not satisfying. Germany will undertake further efforts concerning this subject in the coming years.</p>

Existing action	Comments by PRESSURE 12-2020 and comments received after PRESSURE 12-2020	Proposed formulation for updated BSAP	Explanation
			<p>Germany furthermore proposes that this action should be accompanied by a HELCOM action on further reducing P-discharges from sewage treatment plants.</p> <p>Concerning the reduction of the use of slowly degradable substances in laundry and dishwater detergents Germany considers submitting a proposal for a new action on this subject for the updated BSAP but a synopsis has not been prepared yet and national discussion is ongoing.</p> <p>The EU has already commissioned the following 2 reports: WRc (2002): Phosphates and Alternative Detergent Builders RPA (2006): Non-surfactant Organic Ingredients and Zeolite-based Detergents.</p> <p>These reports need updating, including an overview of alternative builders, where they are used and their effectiveness compared to phosphates. Germany would be interested in drafting this report, in cooperation with other HELCOM CPs.</p>

Theme: Hazardous substances and litter

Existing action	Comments by PRESSURE 12-2020 and comments received after PRESSURE 12-2020	Proposed formulation for updated BSAP	Explanation
<p>Agree to develop in 2008 specific efficiency requirements and emission limit values for small scale combustion appliances in relation to HELCOM Recommendation 28E-8.</p> <p>Origin: BSAP</p>	<p>Comments by PRESSURE 12-2020:</p> <p>Finland has received related information from Denmark and is considering it. Finland will endeavor to propose formulation coordinated with Denmark by 8 May.</p>	<p>Lead country: Finland</p> <p>Formulation according to the Danish proposal after PRESSURE 12-2020:</p> <p>[in order to decrease dioxin emissions] we agree to perform information campaigns</p>	<p>The Danish studies have not been able to confirm general low emission factors for dioxin for modern eco-labelled wood stoves but the studies indicate that the firewood used is of more importance regarding the emissions of dioxin.</p>

Existing action	Comments by PRESSURE 12-2020 and comments received after PRESSURE 12-2020	Proposed formulation for updated BSAP	Explanation
Implementation: National Status: Partly accomplished (3/9 countries)		and other instruments that focus on the quality and species of the firewood, and what is burned in the small-scale combustion appliances	This is also in accordance with the Finnish National Air Pollution Control Programme 2030.
National programmes to eliminate hazardous substances Origin: BSAP Implementation: National Status: Partly accomplished (6/9 countries)	Comments by PRESSURE 12-2020: Requires further approval. Comments after PRESSURE 12-2020: DK: We would need a further explanation on what is meant with this formulation. Regarding national programmes. Do you mean monitoring programmes? And substances that are not regulated by other policies. Is it e.g. illegal use, treated articles which are not regulated etc.? Do you refer to non-target screening methods? A detailed list of planned and implemented measures should be submitted - is this a requirement that goes further than the national programmes of measures in the remit of the WFD and MSFD?	Lead country: Germany, co-lead by Sweden develop national programmes with a particular focus on substances which are not regulated by other policies submit to HELCOM by [2023] a detailed account list of planned and implemented measures in different sectors, pathways and geographical areas in order to share practical information.	
Evaluation of effectiveness of national programmes to eliminate hazardous substance Origin: BSAP Implementation: National Status: Partly accomplished (5/9 countries)	Comments by PRESSURE 12-2020: See previous Comments after PRESSURE 12-2020: DK: We support to merge the two actions.	Lead country: Germany, provisionally co-lead by Sweden	
Implementation of the UNEP 2013 Minamata Convention on Mercury Origin: MD 2013 Implementation: National Status: Not accomplished	Comments by PRESSURE 12-2020: Include commitments regarding implementation of other conventions in the preamble. Do not repeat measures from international treaties in the BSAP.	Lead: Secretariat and Denmark "enhance implementation of the UNEP 2013 Minamata Convention on Mercury" "undertake all possible measures to reduce mercury emissions from energy sector" "control concentration of mercury in dredge material and undertake possible	

Existing action	Comments by PRESSURE 12-2020 and comments received after PRESSURE 12-2020	Proposed formulation for updated BSAP	Explanation
	<p>Proposed actions to some extent repeat those in Minamata and leave the decision for HODs.</p> <p>The group provisionally agreed on the formulation pending acceptance of the para on dredged material by Denmark by 8 May and agreed to seek for decision by HOD on inclusion of the actions from Minamata Convention to the updated BSAP.</p> <p>Finland does not support inclusion of measure related to contaminated wastes as it duplicates the Convention.</p> <p>Comments after PRESSURE 12-2020: DK: We can agree to remove the word continuously as it does not change the meaning of the sentence. In the Danish permits.</p> <p>Regarding inclusion of the year 2030 then we are still awaiting national approval.</p>	<p>measures to prevent its resuspension during dredging operations and handling of dredged material at sea”</p> <p>“introduce the ban of the use of mercury-based amalgam in dentistry by 2030, except when deemed strictly necessary by the dental practitioner based on the specific medical needs of the patient.”</p> <p>“establish and maintain procedures (rules) to handle mercury containing wastes to prevent entering of the contaminant to the environment, including public information on the procedures (rules)”</p>	<p>The suggested added exception for amalgam in dentistry is in line with the EU text for this subject.</p>

Rephrasing of actions previously considered too general for follow-up

Theme: Eutrophication

Action	Comments by PRESSURE 12-2020 and comments received after PRESSURE 12-2020	Proposed formulation for updated BSAP
<p>Address the need for additional measures within transportation, combustion and agriculture (as the three major sources of atmospheric emissions of nitrogen these sectors) with the aim to ensure a Baltic-wide application of uniform standards</p> <p>Origin: MD 2010</p>	<p>Comments by PRESSURE 12-2020:</p> <p>Sweden and Germany to co-lead rephrasing and provide proposal by 8 May.</p> <p>Germany proposed to consider geographical location of emitting installations and also address transportation and combustion in the BSAP.</p> <p>Comments from the Agri group for the new proposal after PRESSURE 12-2020: DK: <i>In the implementation, HELCOM CPs will ensure that measures taken in transportation, combustion and agriculture are tailored to also contributing to have the maximum effect concerning the reduction of the nitrogen deposition onto the Baltic Sea.</i> (or something similar)</p> <p>The reasoning behind the proposed change is that basically all “air pollution mitigation measures” first of all aim at mitigating harmful effects on human health, so that we cannot agree that all measures in “transportation, combustion and agriculture” are maximized with respect to reducing N deposition to the sea, disregarding the focus on human health benefits. We do believe however that is possible to tailor measures in a way, so that both beneficiary effects (on human health and for the Baltic Sea) are considered and can hence serve multiple purposes.</p> <p>EE: <i>HELCOM Contracting Parties will continue to reduce the deposition of atmospheric nitrogen onto the Baltic Sea region through the implementation of the national nitrogen reduction commitments of the Gothenburg Protocol and the EU NEC-Directive 2016/2284 for those HELCOM CPs that are also EU Member States. In the implementation, HELCOM CPs will ensure that measures taken in transportation, combustion and agriculture are tailored to have the maximum effect concerning the for the reduction of the nitrogen deposition onto the Baltic Sea region.</i></p> <p>Explanations:</p> <ol style="list-style-type: none"> 1) “continue to ” means that we parties already have taken actions under Gothenburg Protocol and NEC Directive and are continuing with them 2) We would like to add that while referring to atmospheric precipitation then we talk about the whole region, not just the sea?! Nitrogen falls from the air to both the sea and the earth, so we would specify it with the word 'region'. 3) In addition, we would delete 'in the implementation' at the beginning of the second sentence because it is not clear what the implementation is referring to, apparently the NEC directive and protocol but it remains somewhat confusing. The sentence works without it. 	<p><i>HELCOM Contracting Parties will reduce the deposition of atmospheric nitrogen on the Baltic Sea through the implementation of the national nitrogen reduction commitments of the Gothenburg Protocol and the EU NEC-Directive 2016/2284 for those HELCOM CPs that are also EU Member States. In the implementation, HELCOM CPs will ensure that measures taken in transportation, combustion and agriculture are tailored to have the maximum effect concerning the reduction of the nitrogen deposition onto the Baltic Sea.</i></p> <p><i>The HELCOM Recommendation 24/3 on “Measures aimed at the reduction of emissions and discharges from agriculture” is currently undergoing revision to ensure that ammonia emissions from agriculture are reduced.</i></p>

Action	Comments by PRESSURE 12-2020 and comments received after PRESSURE 12-2020	Proposed formulation for updated BSAP
	<p>4) In the second sentence we would delete 'to have the maximum effect', because no one knows or can actually define what this maximum effect is and whether it is also the best solution. The maximum effect on the reduction of precipitated nitrogen is that the amount of precipitated nitrogen is zero, ie that nothing precipitates. That's not what we mean. But since the idea remains the same without it, we don't think it's necessary.</p> <p>BFFE: Farmers in all countries in the Baltic Sea region also have the National Air Pollution Control Programmes (under NEC directive), which covers the agricultural NH3 emissions. But when we talk about deposition of atmospheric nitrogen then we refer to whole region not just precipitation to the sea (nitrogen is deposited to both land and sea), it should be taken into account. And in the second sentence there is wording “to have maximum effect concerning the” here we would propose to remove that, as the maximum effect can not be defined (maximum effect should mean that the effect of reduction measures lead to zero nitrogen precipitation), also it wouldn't change the meaning of the sentence.</p> <p><u>Taken it into account, we propose following changes:</u> HELCOM Contracting Parties will <u>continue to</u> reduce the deposition of atmospheric nitrogen <u>onto</u> the Baltic Sea <u>region</u> through the implementation of the national nitrogen reduction commitments of the Gothenburg Protocol and the EU NEC-Directive 2016/2284 for those HELCOM CPs that are also EU Member States. In the implementation, HELCOM CPs will ensure that measures taken in transportation, combustion and agriculture are tailored to have the maximum effect concerning the <u>for the</u> reduction of the nitrogen deposition onto the Baltic Sea <u>region</u>.</p> <p><i>*In the first sentence “continue to” could be added, which would indicate that parties already have taken and are taking actions under Gothenburg Protocol and NEC Directive.</i></p>	

Theme: Hazardous substances and litter

Action	Comments by PRESSURE 12-2020 and comments received after PRESSURE 12-2020	Proposed formulation for updated BSAP
<p>Start work on strict restrictions of use for perfluorooctane sulfonate (PFOS), nonylphenol/nonylphenoethoxylates (NP/NPEs), short-chain chlorinated paraffins (SCCPs)</p> <p>Origin: BSAP</p>	<p>Comments by PRESSURE 12-2020:</p> <p>Agreed pending confirmation Denmark by 8 May.</p>	<p><i>Introduce measures based on the best available scientific knowledge and technologies to restrict the use and prevent releases of perfluorinated alkyl substances, phenolic compounds with endocrine disrupting effects and chlorinated paraffins.</i></p>
<p>If relevant assessments show the need, initiate adequate measures for medium-chain chlorinated paraffins (MCCPs), octylphenols (OP)/Octylphenol</p>	<p>Comments by PRESSURE 12-2020:</p> <p>Proposal is to add one more sentence referring to the “priority list”. Germany will provide a proposal by 8 May.</p>	<p><i>Establish a mechanism for HELCOM to respond to screening and assessment results pointing out regional challenges or positive developments related to contamination of the Baltic Sea</i></p>

Action	Comments by PRESSURE 12-2020 and comments received after PRESSURE 12-2020	Proposed formulation for updated BSAP
ethoxylates (OPE), perfluorooctanoic acid (PFOA), decabromodiphenyl ether (decaBDE) and hexabromocyclododecane (HBCDD) (2009) Origin: BSAP		<i>environment by priority substances and contaminants of emerging concern.</i>

RE: HELCOM PRESSURE 12-20/ Rephrasing of HELCOM Actions

Theme: Eutrophication

COMMENTS of the Ministry of Development of the Republic of Poland to the Rephrasing of HELCOM Actions

We would like to express our concern with the suggested reformulation of Baltic Sea Action Plan as follows (in blue):

Existing action	Comments by PRESSURE 10a-2019, PRESSURE 11a-2020 and PRESSURE 12-2020	Proposed formulation for updated BSAP	Explanation
<p>Target the elimination of phosphorus in laundry detergents for consumer use as soon as possible, but not later than by 2015</p> <p>Origin: MD 2010) Implementation; National Status: Partly accomplished (8/9 countries)</p> <p>(Considering also overlapping actions:</p> <ul style="list-style-type: none"> - Encourage voluntary use of P-free dishwasher detergents (MD 2010) - RECOMMENDS to the Governments of the Contracting States to the Helsinki Convention that further investigations on alternative builders, especially on their use and environmental effects, be carried out. (HELCOM Recommendation 28E-7)) 	<p>PRESSURE 10a-2019: Category 3</p> <p>Accomplishment of the existing action is pending the implementation by Russia. Possible development of the action. PRESSURE 10a-2019 (para 2.9) took note of a study concerning the environmental risk of surfactants and their transformation products discharged by wastewater treatment plants which will be published. The Meeting noted that the action could also be extended to address other contaminants from industrial dish waters, e.g. surfactants.</p> <p>PRESSURE 11a-2020: Germany will lead the rephrasing</p> <p>There are two points:</p> <ol style="list-style-type: none"> 1. To rephrase to include industrial use and dishwasher detergents 2. To make a new action on hazardous substances to include other contaminants in detergents <p>Other actions regarding dishwasher detergents and alternative builders from BSAP should be checked.</p> <p>There is a need for background information on what are the alternative substances to replace phosphates and their potential environmental effect.</p> <p>The current action on laundry detergents should be kept since</p>	<p>Lead country: Germany</p> <p>Rephrasing not needed for the existing action "Target the elimination...". Will be kept in the updated BSAP if Russia has not implemented this action by 2020.</p> <p><i>Undertake efforts to target the elimination of phosphorus in detergents for industrial & institutional use, in particular for institutional use of laundry and dishwasher detergents in compliance with the best available technique [no later than by 2030]</i></p> <p><i>By 2025, develop and publish a HELCOM progress report about alternative builder, especially on their use, environmental effects and effectiveness.</i></p>	<p>Note that for EU Member States the use of P-free dishwater detergents for consumer use is regulated since 1st of January 2017. Therefore, laundry and dishwater detergents for consumer use are regulated.</p> <p>Germany proposes that HELCOM undertakes action concerning phosphorus in detergents for industrial & institutional use, in particular for institutional use of laundry and dishwasher detergents for</p> <p>Germany proposes to apply the best available technology concerning phosphorus in laundry and dishwasher detergents for industrial and institutional use. However, the question arises how BAT is determined, since no BREFs (EU Best Available technique reference documents) exist. Germany has already addressed this subject in a study but the outcome was not satisfying. Germany will undertake further efforts concerning this</p>

Existing action	Comments by PRESSURE 10a-2019, PRESSURE 11a-2020 and PRESSURE 12-2020	Proposed formulation for updated BSAP	Explanation
	<p>it has not been implemented by Russia and the target year should be changed.</p> <p>Secretariat will clarify implementation with Russia and suggest a target year</p>		<p>subject in the coming years.</p> <p>Germany furthermore proposes that this action should be accompanied by a HELCOM action on further reducing P-discharges from sewage treatment plants.</p> <p>Concerning the reduction of the use of slowly degradable substances in laundry and dishwater detergents Germany considers submitting a proposal for a new action on this subject for the updated BSAP but a synopsis has not been prepared yet and national discussion is ongoing.</p> <p>The EU has already commissioned the following 2 reports:</p> <p>WRc (2002): Phosphates and Alternative Detergent Builders</p> <p>RPA (2006): Non-surfactant Organic Ingredients and Zeolite-based Detergents.</p> <p>These reports need updating, including an overview of alternative builders, where they are used and their effectiveness compared to phosphates. Germany would be interested in drafting this report, in cooperation with other HELCOM CPs.</p>

Please find below our analysis and comments below:

1. Harmonization of the single market

Detergents, like all chemical compounds that are subject to demanding legal regulations, which guard safety for human health and the environment. Among the provisions of key importance from the perspective of detergents from the industrial and institutional (I&I) sector we can mention, among others: Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (CLP Regulation (EU) No. 1272/2008), the Biocidal Products Regulation (BPR, Regulation (EU) No 528/2012), Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) No 1907/2006, Regulation (EC) No 648/2004 of the European Parliament and of the Council of 31 March 2004 on detergents, and Regulation (EU) 2017/745 of the European Parliament and of the Council of 5 April 2017 on medical devices, amending Directive 2001/83/EC, Regulation (EC) No 178/2002 and Regulation (EC) No 1223/2009 and repealing Council Directives 90/385/EEC and 93/42/EEC.

The aforementioned guarantee that products introduced to the market comply with high standards in the field of safety for health and the environment, while maintaining free movement of goods between European Union countries.

Initiatives in Member States that go beyond international regulations constitute industry barriers which can be very difficult to overcome. The need for a harmonized market standard is the key to maintaining the reliability of a company's services.

2. Environmental aspects

With regard to the environmental impact assessment, both for the individual ingredients and the product as a whole, detergents comply with the requirements of the REACH regulation. This regulation already provides a legal framework which takes into account emissions into the environment and their control, where necessary.

In addition, we would like to point out that work related to restrictions on the use of phosphorus compounds has been undertaken in the past and was finally introduced by an amendment to the Detergents Regulation (Regulation (EU) No 259/2012) as regards consumer laundry products and dishwashers. The A.I.S.E. industry association, based on available data, assessed that by 2012, i.e. before central regulation appeared, around 70% of laundry detergents and 5% of dishwasher detergents in the EU did not contain phosphorus compounds - as a result of voluntary activities and national restrictions. As a consequence, approximately 30% of washing preparations and 95% of dishwasher detergents had to be reformed in connection with Regulation (EU) No 259/2012. A.I.S.E. estimated that this change resulted in a reduction of around 55,000 tons of phosphorus emissions per year across the EU. However, the most important in this consideration is the fact **that to date there is no clear evidence that limiting the use of phosphorus compounds in consumer laundry products and dishwashers by developing phosphate-free formulations has had a significant impact on eutrophication.**

It is also worth emphasizing that the quite common water recycling in the professional sector also reduces emissions into the environment, as well as the fact that in many countries, professional laundries are usually located in cities or large communities and are connected to sewage treatment plants.

3. Phosphates in I&I laundry detergents

a. Attributes of phosphate performance in I&I laundry detergents

Laundry products in the I&I sector differ significantly from consumer laundry products. The key here are differences in materials which are cleaned, e.g. hospital textiles, industrial textiles, which more often require disinfection. **Expectations concerning the efficiency of the washing process for these textiles are higher and much more severe.** In addition, soft water is often used in professional installations, which is why, unlike the consumer sector, in which phosphates mainly contributed to the reduction of water hardness, the role of phosphates is more complex. Phosphates prevent re-deposition of dirt, significantly increase the efficiency of the process, thanks to which it is possible to remove difficult stains. In addition, it is worth emphasizing that the washing time in the I&I sector is shorter (usually 15-30 ") and only 1/3 of water is used per kg of laundry compared to common appliances. Such effective cleaning is only possible with phosphates. Finally, an important quality aspect is the durability of textiles: phosphates allow a longer life span of textiles, which is a critical economic factor in the professional cleaning sector (leasing companies).

b. Alternatives to phosphates in I&I laundry detergents

Phosphates are good sequestrants, they reduce water hardness, bind heavy metals and thus significantly support the cleaning process. Alternatives concerning regulation of water hardness and heavy metal bonds may be e.g. EDTA and NTA. However, both of these compounds may be restricted in some countries due to their potential classification.

Other alternatives - zeolites were also assessed, but their main advantage was the reduction of water hardness, which is less important in the I&I sector. In addition, zeolites cannot be an alternative to phosphates in professional laundry products for one more important reason - they do not meet the technical specifications - the level of incrustation in textiles. This requirement guarantees minimal fabric life. Zeolites also generate deposits that block outflows and cannot be used in tunnel washers. It is also important to emphasize the fact that these raw materials, if they should be treated as potential alternatives, can lead to higher water consumption and higher energy consumption, due to their technical parameters.

c. Indirect registration restrictions

In the I&I sector, many phosphate-containing products are registered as medical devices or biocidal products. Therefore, the reformulation of these products is often associated with the need for new research / tests and obtaining permits, which significantly increases the costs of such an undertaking and extends the time of application of potential restrictions.

4. Phosphates in I&I detergents for dishwashers

a. Attributes of phosphate efficiency in I&I detergents for dishwashers

Phosphates are necessary ingredients in the formulations of products to be washed in dishwashers. They are effective, efficient and multifunctional. They optimize the ingredients utilization profile - lower dose of the final product, increase cleaning efficiency at low temperatures, thus ensuring less energy consumption. Phosphates are also necessary to ensure certain technical parameters of the washing / cleaning process in the I&I sector: very short washing / cleaning time (usually 2 minutes), washing at high temperature, possible low dose of product, restrictions related to recycling of washing water, type of dirt and frequency washing / cleaning.

In the hospitality industry, optimal hygiene is critical due to the potential impact on a very large group of people or sensitive people.

Special devices are used to clean surgical instruments. For some materials used in this sensitive sector, thorough cleaning can only be done with phosphate-based detergents.

b. Alternatives to phosphates in I&I detergents for dishwashers

There are a number of alternative sequestering agents that can be considered alternatives to phosphates, however, direct substitution is often not easy. In addition to traditional alternatives, such as NTA and EDTA, which have their limitations, there are also biodegradable compounds, such as sodium citrate, MGDA, GLDA, HEIDA, EDDS, IDS. However, they are either weaker chelating agents and / or much more expensive ingredients.

The alternatives available today are much less effective than phosphates. They do not have dispersive properties of phosphates and are less effective in preventing deposits and residues. This results in the need to dispense much larger amounts of the product or to use polymers and / or phosphonates in order to complete their action profile. Long years of research and comprehensive testing have indicated that any alternatives, if available, would lead to a greater burden on the environment - higher energy and water consumption, increased emissions of organic substances into the environment, or increased loads on sewage treatment plants with these substances.

In addition, an important way to avoid the use of a large amount of sequestrate is to add chlorine based bleach to the formulation. Due to the specifics of the industrial process, the washing solution is often used many times, supplemented periodically with a new batch. This situation may cause the cleaning / washing solution to remain in the device for a long time. To ensure a proper hygiene of a cleaning process and its good performance, it is very important that the sequestrant and chlorine bleach are compatible. This is the case for phosphates and chlorine, but with many alternatives, the chemical stability of this combination is very poor.

SUMMARY

Given the above, in our assessment based on extensive consultation with the detergent industry, current work to eliminate the use of phosphorus compounds in industrial and institutional detergents, seems to be too radical direction, in view of lack of suitable alternatives to the use of phosphates in these specific products, both in technical terms and economical perspective.

It should be emphasized that finding alternatives is a difficult task that requires significant amount of time, resources and multi-directional research.

The real impact of such a limitation should be seen - to no lesser extent - also in the context of important benefits phosphates bring to the detergents in the I&I sector.