

## EPDLA's inputs to the ECHA public consultation on DBNPA, 2,2-dibromo-2-cyanoacetamide

The EPDLA (European Polymer Dispersion and Latex Association, a Cefic Sector Group) is dedicated to promoting the safe manufacture, transportation, distribution, handling and use of waterborne polymer dispersions and redispersible powders made thereof in compliance with regulatory requirements and industry guidelines.

EPDLA members are committed to Responsible Care® principles and have implemented risk management according to the precautionary principles.

### 1. Alternative Identity and Properties

2,2-dibromo-2-cyanoacetamide (DBNPA) has a unique set of properties. Apart from being highly efficient for many types of bacteria (a.o. acetobacter-species and pseudomonadae), it also is a quick killer resulting in a short term preservation of the aqueous system. Other well known biocides for PT6 application are the isothiazolinone-(IT) types (CMIT, BIT, MIT and mixtures thereof), however only few active substances are compatible with polymer dispersions: Possible alternatives to preserve waterborne systems like polymer dispersions, emulsions or pigment- and filler slurries are the above mentioned IT-types, sodium pyrithione and e.g. 2-bromo-2-nitropropane-1,3-diol (Bronopol). But all these active substances act significantly slower than DBNPA so that the combination of DBNPA and aforementioned alternatives can give both a short and long term preservation for aqueous systems like polymer dispersions – ideal to ensure a long shelf life.

DBNPA will degrade quickly in an aqueous system. Definitely at pH-values >7 and at elevated temperature. This rapid degradation offers the possibility to the final formulator to degrade the active component by increasing the pH and/or by increasing the temperature. This would result in a final article in the market that no longer would contain DBNPA.

### 2. Technical Feasibility

EPDLA members do not see a technical solution for the replacement of DBNPA as a quick killer resulting in a short term preservation of aqueous systems. DBNPA simply has too unique properties as highlighted under 1.

From other product types it is known that there are alternatives. E.g. for PT4 hydrogen peroxide or peracetic acid are used. These substances cannot be used in polymer dispersions because of their impact on the electrochemical potential of a polymer dispersion, which can dramatically influence the properties of these products.

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Further in case DBNPA would no longer be permitted as a PT6 preservative, the choice of active components would be further restricted. The danger to this restriction is that the bacteria can adapt themselves and the efficiency of the biocides will reduce. Changing biocidal systems largely prevents bacteria to adapt themselves.

### 3. Economic Feasibility

When another efficient biocide would be banned to be used the indirect costs of waterborne systems will become tremendous. Bacterial contamination can cause destabilisation of waterborne systems, resulting in waste. Bacterial contamination can also cause discoloration of the final article and result in an unpleasant smell of e.g. a paint.

Due to the fact that the use of methylisothiazolinone has been restricted due to its SCL of 15 ppm there are no real alternative for DBNPA to be efficient against the acetobacter and pseudomonadae species.

The indirect costs caused by losing DBNPA as a PT6-preservative due to bacterial contamination may cost hundreds k€ per contamination case. This number excludes the extra waste formed. So for a sustainable product group like waterborne systems we clearly see the need for keeping DBNPA available as a PT6 preservative.

### 4. Hazards and Risks of the Alternative

Since biocides are designed to target and interact with biological matrices, they are often associated with inherent but manageable toxicities. With isothiazolinones biocides the primary hazards of concern are local, point-of-contact toxicity, such as irritation/corrosion as well as sensitisation following dermal exposure.

### 5. Availability

We do not see any problems with the availability of DBNPA in the market.

### 6. Other Comments

We clearly see the need for a holistic approach to enable the European industry for waterborne systems using sustainable preservatives. EPDLA worries, that the number of available active





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substances - will continue to fall, although safe use can be proven in the application<sup>1</sup>. Therefore, the loss of DBNPA as a PT6-preservative would further endanger sustainable water-based products.

## 7. Conclusion on suitability and availability of the alternative and summary

We are not aware of sustainable and suitable alternatives.

<sup>1</sup> VCI-Position on Innovation in In can-Preservation: Opportunities and Limitations (13.05.2019)

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**About EPDLA**

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