

Environmental Assessment

1. **Date**

April 30, 1999

2. **Applicant**

BASF Corporation

3. **Address**

11501, Steele Creek Road
Charlotte, NC 28273

4. **Description of the Proposed Action**

The Environmental Assessment (EA) presented here has been prepared in accordance with the "Abbreviated Environmental Assessment For Functional Components of Finished Food Packaging Present At Less Than or Equal To 5% by Weight".

The action requested is the issuance a "Threshold of Regulation" exemption from the need for a Food Additive Regulation, pursuant to 21 CFR Section 170.39 for Macol DNP-21 when used as a component in paper or paperboard coating formulations at a level not to exceed 0.05% by weight of finished coatings.

By way of background, Macol DNP-21 is used to maintain the colloidal stability of calcium stearate dispersions which are used as lubricant in paper and paperboard coating formulations. BASF produces Macol DNP-21 at its 11200 Bay Area Boulevard, Pasadena, Texas 77507, location.

Macol DNP-21 is shipped to BASF Appleton Site at 2901, North Conkey Street, Appleton, Wisconsin 54911-8751 for blending into finely divided calcium stearate dispersions. This Macol DNP-21 containing calcium stearate dispersion product is then sold to the Paper Mills for use as lubricant in paper and paperboard coating formulations. BASF does not manufacture the coated paper and paperboard.

The food contact paper and paperboard produced with Macol DNP-21 will be utilized in patterns corresponding to the natural population density and widely distributed across the country. It is therefore anticipated that disposal will occur nationwide, with about 80% of the materials ultimately being deposited in land disposal sites and about 20% incinerated. There are no special circumstances regarding the environment surrounding either the use or disposal of food contact coated paper or paperboard processed in the presence of a small amount of Macol DNP-21. Its use will not significantly affect the number of paper and paperboard food contact articles or their methods for disposal.

5. **Identification of Chemical Substances that are the Subject of the Proposed Action.**

The substance that is the subject of this "Threshold of Regulation" exemption request is Macol DNP-21 having the chemical name:

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Alpha-(dinonylphenyl)-omega-hydroxypoly(oxy-1,2-ethanediyl).

It is further identified by:

CAS Registry Number: 9014-93-1

Molecular Formula: $(C_2H_4O)_{21}C_{24}H_{42}O$

6. Introduction of Substances into the Environment.

BASF is currently producing Macol DNP-21 at the Pasadena, Texas facility. The only typical emission of the final product is due to the occasional cleaning of the reactor vessel. This waste is processed through an equilibration tank and sent to a publicly owned treatment works (POTW). Any water insoluble waste is collected and sent to a licensed waste disposer. All air permits necessary for the site have been obtained from the Texas Environmental Protection Agency. An increase in the production of dinonyl phenol ethoxylates would not impact current air or water releases.

Macol DNP-21 produced by BASF will be used as an ingredient to prepare finely divided calcium stearate dispersions at our Appleton, Wisconsin facility. Closed systems that incorporate a scrubber for handling air emissions are used for preparing formulations containing Macol DNP-21. Regarding permits for air and water discharges, the Appleton site is considered exempt since it is considered a very small generator by the Wisconsin department of Natural Resources Bureau of Air and Water Management. All wash water generated from the clean-out of the blending system will be treated by chemical adjustment, coagulation and flocculation.

Production of Macol DNP-21 or the Macol DNP-21 containing calcium stearate dispersions is not expected to have an impact on current air or water emissions. Anticipated volumes of the Macol DNP-21 used to make calcium stearate dispersions is considered to be confidential market information and is disclosed in Attachment 1.

The usage of the Macol DNP-21 stabilized calcium stearate at paper mills and coating operations is expected to be 99% of the supplied product. Therefore, wastage would be minimized to not exceed 1%. This waste could be treated on site, go to a publicly owned treatment works and/or collected and sent to a specially licensed waste disposer. Of the 99% used at paper mills and coating operations, it is expected that approximately 95-97% or more would remain on the paper at coating operations. Based upon confidential volume information, it is estimated that on an annual basis, no more than 500 pounds of Macol DNP-21, as a worst case scenario, is expected to enter the environment via wastewater from coating operations; this is based upon the assumption that the majority of these plants will not use sophisticated wastewater treatment methods, but rather discharge directly to POTW.

Regarding coating operations, it is expected that the majority of Macol DNP-21 used in the coatings formulation will become part of the coating on the paper or paperboard. It will be expected that the paper or paperboard having coating formulations will be used in patterns corresponding to national population density and disposed of primarily by land disposal, secondarily, by incineration. Environments potentially affected by disposal would be watersheds or groundwater receiving leachate from land disposal sites and areas subject to air emissions from landfills and incineration sites. The amount of Macol DNP-21 extractable from the coated paper or paperboard would translate into 0.2 parts per billion in terms of maximum dietary exposure.

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BASF's Pasadena, Texas and Appleton, Wisconsin sites are currently in compliance with all applicable emissions requirements. This petition is not expected to have any impact on compliance with these requirements. There are no applicable occupational exposure requirements for the Macol DNP-21 at this time.

7. Fate of Emitted Substances in the Environment.

In accordance with the provisions of Section 25.31 a(b)(1), information on environmental fate is normally not required for food additives that are present as functional components of finished food-packaging material at not greater than 5 percent by weight and, therefore, is not provided in this assessment.

8. Environmental Effect of Released Substances.

In accordance with the provisions of Section 25.31 a(b)(1), information on environmental effects is normally not required for food additives that are present as functional components of finished food-packaging material at not greater than 5 percent by weight and, therefore, is not provided in this assessment.

9. Use of Resources and Energy.

Introduction of Macol DNP-21 into the calcium stearate dispersion improves the colloidal stability of the calcium stearate particles in the processing of coating formulations. By enhancing the performance of calcium stearate dispersion as lubricant in paper and paperboard coating operations, it indirectly improves the flow and leveling characteristics of the coatings, thus saving energy in processing as well as improving the smoothness and satin-feel of the coated paper and paperboard.

10. Mitigation Measures.

No significant adverse environmental impacts are expected to result from the use and disposal of food-contact coated paper and paperboard manufactured in the presence of Macol DNP-21. This is because of the minute levels of leaching of potential migrants from the finished article and the insignificant impact on environmental concentrations of combustion products of Macol DNP-21. Thus, the presence of Macol DNP-21 in the paper and paperboard coating formulations is not reasonably expected to result in any new environmental issues requiring mitigation measures of any kind.

11. Alternative to the Proposed Action.

No potential adverse environmental impacts have been identified that would necessitate alternative actions to that proposed in this request.

The alternative of not granting the request would simply result in the continual use of a less-than-optimal performing calcium stearate dispersions in the paper and paperboard coating operations for food-contact articles.

12. List of Preparers

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BA 1980 Biology, Oakland University
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13. Certification

The undersigned official certifies that the information presented is true, accurate and complete to the best of his knowledge.



4/29/99

Kar P. Lok
Manager, Product Regulations/Quality
Dispersions & Paper Chemicals

Date

14. References

FAP #3B4363

15. Appendices

- Attachment 1 (confidential)
- Material Safety Data Sheet for Macol DNP-21

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