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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

MEMORANDUM

July 23, 1993

SUBJECT: Reregistration Eligibility Document for Bromine
Case 4015

FROM: Betsy Grim, Chemist *Betsy Grim 7-23-93*
Science Analysis & Coordination Section
Environmental Fate and Effects Branch (H7507C)

THROUGH: Evert K Byington, Chief *Evert K Byington*
Science Analysis & Coordination Section
Environmental Fate and Effects Branch (H7507C)

TO: Bruce Sidwell, Chemical Review Manager
Accelerated Reregistration Branch
Special Review and Reregistration Division (H7508W)

Attached is the Environmental Fate and Effects Division's position concerning the environmental fate and ecological effects assessment for bromine. This information is intended for use in the production of the Reregistration Eligibility Document (RED). Included are the support chapters prepared by Al Vaughan (EEB) and E. Brinson Conerly-Perks (EFGWB).

The environmental fate and ecological effects data base will support reregistration eligibility for the indoor use of bromine in cases for which there are no effluents. Per conversation with Bruce Sidwell, July 21, 1993, EFED did not review this case for consideration as a microbicide for use in cooling water systems, wastewater treatment, disinfectant for greenhouses, agricultural premises, horticultural areas, or commercial and residential landscape areas, all uses which we understand are under consideration for registration. Therefore, a label statement addressing NPDES permits is not required.

Please contact Betsy Grim, 305-7634 if you have any questions concerning this case.



2024128

ABarton
HJacoby
AMaciorowski
RED file
List D file



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D. Environmental Assessment

1. Environmental Fate

Data has not been submitted to the Agency upon which to base an Environmental Fate Profile for bromine but the behavior and chemical characteristics have been well researched and documented in standard chemical literature. These data support reregistration for the indoor uses of bromine.

Elemental bromine is a highly reactive strong oxidizing agent. However, the products registered with the EPA contain very little free bromine. According to the use patterns reported, bromine is applied in low concentration (a maximum of about 0.7%) in solutions which also contain "stabilizing" agents. These solutions serve to sanitize hospital, commercial, domestic and animal premises and equipment. Bromine is also used in a resin matrix to purify drinking water on board ships and oil drilling rigs; for this use it is contained in cartridges at a concentration of 30%. There are no environmental applications.

Although EFGWB did not review a hydrolysis study, chemical characteristics of bromine indicate that no hydrolytic transformation would be expected to be observed under standard study conditions.

2. Ecological Effects

Based on the strictly indoor use of bromine the Ecological Effects Branch does not prepare a ecological effects risk assessment. The data set required is reduced to four studies: one avian acute oral, one avian dietary, one fish acute, and one aquatic invertebrate acute. These studies are used to determine the environmental hazard in case of spills. In the case of bromine, the data set is further reduced to exclude the avian requirements. Bromine is a highly volatile, corrosive liquid, and standard avian tests would not provide useful toxicity data.

Aquatic ecotoxicity data show that bromine chloride, measured as bromine, is highly toxic to freshwater fish and aquatic invertebrates. MRIDs 40669903, 40669902, 4066904.

III. Precautionary Labeling

There are no manufacturing use products listed in the LUIS report and this chemical has strictly indoor use. Therefore, EFED does not require a labelling statement.

DP Barcode : D191175
 PC Code No : 008701
 EEB Out : 06.01.93

To: Bruce Sidwell
 Product Manager 53
 Special Review and Reregistration Division (H7508W)

From: Anthony F. Maciorowski, Chief
 Ecological Effects Branch/EFED (H7507C)

Attached, please find the EEB review of...

Reg./File # : 008701
 Chemical Name : Bromine
 Type Product : Microbiocide
 Product Name : Bromine Products
 Company Name : Various Registrants
 Purpose : SRRD request for development of RED for Case No. 4015.

Action Code : 604 Date Due : 06/01/93
 Reviewer : A. Vaughan Date In : 05/12/93

Guideline/MRID Summary Table: The review in this package contains an evaluation of the following:

JDLN NO	MRID NO	CAT	GDLN NO	MRID NO	CAT	GDLN NO	MRID NO	CAT
71-1(A)			72-2(A)			72-7(A)		
71-1(B)			72-2(B)			72-7(B)		
71-2(A)			72-3(A)			122-1(A)		
71-2(B)			72-3(B)			122-1(B)		
71-3			72-3(C)			122-2		
71-4(A)			72-3(D)			123-1(A)		
71-4(B)			72-3(E)			123-1(B)		
71-5(A)			72-3(F)			123-2		
71-5(B)			72-4(A)			124-1		
72-1(A)			72-4(B)			124-2		
72-1(B)			72-5			141-1		
72-1(C)			72-6			141-2		
72-1(D)						141-5		

Y=Acceptable (Study satisfied Guideline)/Concur
 P=Partial (Study partially fulfilled Guideline but additional information is needed)
 S=Supplemental (Study provided useful information but Guideline was not satisfied)
 * =Unacceptable (Study was rejected)/Nonconcur

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