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

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OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: **Application and post-application exposure issues related to the use of silver nitrate (Zeomic type AJ10D) in HVAC coatings**

From: **Siroos Mostaghimi, Ph.D., Environmental Engineer** Siroos Mostaghimi
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To: **Marshall Swindel, PM #33**
Regulatory Management Branch I
Antimicrobials Division (7510C)

Thru: **Winston Dang, Team Leader** 2/1/2001
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Risk Assessment and Science Support Branch (RASSB)
Antimicrobials Division (7510C)

Norm Cook, Chief 02/01/2001
Risk Assessment and Science Support Branch (RASSB)
Antimicrobials Division (7510C)

DP Barcode: D271760

Pesticide Chemical No.: 072503

EPA MRID No.: NA

Review Time: 8 Hours

PHED: N/A

ACTION REQUEST:

The Risk Assessment and Science Support Branch (RASSB) has been asked to comment on the application and post application exposure issues related to the proposed new use of Silver Zeonite A (Zeomic Type AJ10D) in Heating Ventilation and Air Conditioning (HVAC) coatings on the industrial equipments.

BACKGROUND:

Zeomic will be used as an antimicrobial additive for coating of HVAC systems. According to a document "Coating Processes Incorporating the AgION Antimicrobial" provided by the registrant (dated January 12, 2001), there are three types of coating processes which are used to incorporate the AgION antimicrobial into heating ventilation and air conditioning components. These processes are:

1. Roll Coating of strip Steel;
2. Spray Coating of Component Parts of Duct Work; and
3. Electro Deposition Coating of Heat Exchangers.

CONSIDERATIONS:

I. APPLICATION EXPOSURE ISSUES:

According to Mr. Paul Ford of AgION (personal communication with Winston Dang,) the roll coating of strip steel and electro deposition coating of heat exchangers are fully automated in closed systems.

RASSB has concerns about the exposure to workers by the second process, spray coating of component parts of duct work. The workers using this process may be exposed to the chemical through dermal and inhalation contact even when the spray pressure is as low as 10 psi. Because of the lack of enough toxicity data and the unknown extent of the exposure there is a need for more detailed explanation of this process. The registrant suggested that the use of extra low pressure (10 psi) and low flow rate (1.32 gals/hr) by using HVLP spray gun would reduce the bounces which may reduce exposure. Also, use of proper PPEs (such as chemical resistant gloves, cover-all or respirator) can reduce the risk of exposure to the workers using this process.

II. POST APPLICATION EXPOSURE ISSUES:

Because of the chemical characteristic of silver ion (i.e very low vapor pressure) and the conclusion in the review by the AD scientist, Robert Quick (dated 5/30/2000) for the water contact articles treated with silver zeonite, the low migration of silver ion to the surface of low density polyethylene (LDPE) is expected, and based on this conclusion, the post application exposure will be minimal through the HVAC system.

It should be noted that this conclusion does not apply to any future amended registrations or new uses for

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silver ions, for which a detailed risk assessment may be necessary.

Attachment: Memo dated May 30, 2000 "Review of the Sinanen Co., Limited Zeomic Type AJ10D Silver Zeonite A Study Migration Study For Dietary Risk Assessment from Drinking Water In Contact With Water Contact Articles" by Robert Quick/RASSB to Marshall SWindell

File: C:\Myfiles\ 2001 Reports\ Application and post-application exposure issues related to the use of silver nitrate (Zeomic type AJ10D) in HAVC coatings(D271760)

CC: Chemical files
Siroos Mostaghimi

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