UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES
Antimicrobials Division

March 28, 2006

SUBJECT: PRODUCT CHEMISTRY REVIEW OF:
Nanoguard

DP Barcode: D326031 **Reg. No. Or File Symbol: 82077-R**
TGAI\MUP [X] OR **End-use Product []**

TO: Velma Noble\Tracy Lantz
PM Team No. 31

FROM: Chris Jiang, Chemist
Product Science Branch
Antimicrobials Division (7510C)

CJ

THRU: Karen P. Hicks, CTT Team Leader
Product Science Branch
Antimicrobials Division (7510C)

3/28/06

THRU: Michele Wingfield, Branch Chief
Product Science Branch
Antimicrobials Division (7510C)

Product Formulation for Nanoguard from label	
Active Ingredient(s)	**% by wt.**
3-(trimethoxysilyl) propyldimethyl octadecyl ammonium chloride	72.0 %

BACKGROUND:

The registrant has submitted a product chemistry package in support of a new registration of a manufacturing-use product. The package contains pre- and post-reaction Confidential Statements of Formula, a label, and Series 830 Group A and B data requirements that have been identified by the Agency as MRID #'s 46731001, 46731002, and 4673003.

FINDINGS:

1. The concentration of the active ingredient on the post-reaction Confidential Statement of Formula (CSF dated 17 Mar 2006) is consistent with the label declaration. This CSF supersedes all previous CSFs for this product.

2. All ingredients in the formulation are cleared for use in pesticides.

3. The descriptions of the starting materials and the manufacturing\production\formulation process are **acceptable**.

4. The discussion of the formation of impurities is **acceptable**.

5. The preliminary analysis is **acceptable**.

6. The certified limits are **acceptable**.

7. The enforcement analytical method is **acceptable**.

8. The color, physical state, and odor of the product are **acceptable**. The test substance is an amber liquid with a slight aliphatic amine odor.

9. The melting point is **acceptable** as this requirement is not applicable to liquids.

10. The boiling point is **acceptable** as the boiling point is 130 °C.

11. The density is **acceptable** as the density was determined to be 0.944 g/cm^3.

12. The water solubility is **acceptable** as this requirement is not applicable as the product is miscible in water.

13. The vapor pressure is **acceptable** as the vapor pressure was determined to be 100 mm Hg at 77 °F.

14. The octanol\water partition coefficient is **acceptable** as this requirement is not applicable as the product is a mixture which is miscible in water.

15. The dissociation constant is **acceptable** as this requirement is not applicable as the product is a mixture and will not dissociate in water.

16. The pH is **acceptable** as the pH of a 5% solution was determined to be 6.7. The pH can have a range depending on the amount of amine.

17. The requirement for stability with respect to normal and elevated temperatures and metal/ions is **acceptable** as the product is synthesized at elevated temperatures. The product is based on an organic compound so it will not react with metals and metal ions.

18. The oxidation/reduction potential is **acceptable** as this requirement is not applicable to the product as the product does not contain oxidizing or reducing agents.

19. The flammability is **acceptable** as the flash point was determined to be 34 °C (93 °F).

20. The explodability is **acceptable** as the product is not explosive.

21. The study for storage stability is ongoing. Interim results show that the product is stable at room temperature. The self-certification states to avoid freezing.

22. The viscosity is **acceptable** as the viscosity was determined to be 12 cps at 25 °C.

23. The miscibility is **acceptable** as the product is miscible with water and most organic solvents.

24. The study for corrosion characteristics is ongoing. Interim results show that the product is not corrosive.

25. The dielectric breakdown voltage is **acceptable** as this requirement is not applicable as the product is not to be used around electrical equipment.

26. The statement of "Methanol may cause blindness" must be added to the label per the Label Review Manual.

RECOMMENDATIONS:

1. Product Science Branch of Antimicrobials Division finds this submission in support of the registration of 82077-R to be acceptable, pending the label change.