3-3-75

Environmental Chemistry REview for 3-(trimethoxysilyl) propyldimethyl-octadecyl ammonium chloride (X5700)

Reg. No. (File Symbol) 34292-R

I. RECOMMENDATIONS

NAC registration of Dow Corning X9-5700 Antimicrobial Agent EPA-34292-R

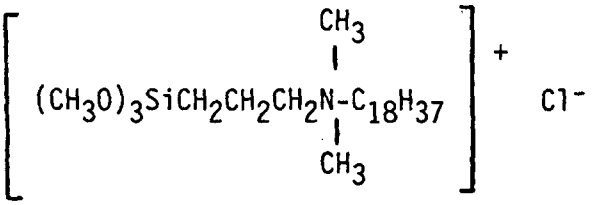
Acceptance is for the use described in the label and bulletin submitted only. If other uses are proposed for the active ingredients, environmental chemistry data in response to PR Notice 70-15 may be required to support them.

II. INTRODUCTION

A. Other names: X9-5700

B. Type of pesticide: Bacteriostat, fungistat and algistat.

C. Physical, chemical properties, etc.



Appearance: Light to dark amber liquid

Molecular Wt.: 496.3

Empirical Formula: $SiC_{26}H_{58}O_3N\ Cl$

Specific Gravity at 25°C: 0.841-0.859

Refractive Index at 26°C: 1.387-1.392

pH: 5.8-6.2

Thermal Stability: Slow decomposition begins at 125°C

Flash Point: 52°F (11°C)

Freezing Point: 26°F (-3°C)

D. Product name: Dow Corning X9-5700

E. Crops involved: None (antimicrobial agent used in textile treatment)

F. Other environmental reviews: none

At a meeting on November 14, 1973 the following comments were made:

1. An effluent caution is needed.

2. Delete the word "nonpolluting."

3. Data are needed to support the claim, "Leaching off surface."

III. DIRECTIONS FOR USE

Aqueous solution is applied to textiles at concentrations of 0.1 to 1.0 weight percent of active ingredients depending on the textile being treated.

Label caution statement: "Treated effluent should not be discharged where it will drain into lakes, streams, or public waters."

IV. DISCUSSION OF DATA

A. Analytical methods: Section VIII

1. Spectroscopic determination of silicon from an aqueous mixture excited by ac spark

2. Determination of amine content by titration with perchloric acid to color or potentiometric end point

3. NMR determination of proton structure ratios

B. Reports given in Section IX of the data page 160 specifically Nos. 4 and 8 indicate that compounds of the type of X9-5700 are chemically bound to many surfaces including textiles. These compounds tend to remain biologically active and bound to surfaces even after many washings.

Some wash durability data taken from Table III Bulletin 19-015 are listed below:

Number of Machine Washing Cycles	Bacterial* Reduction Over Control	
	1% Dow Corning X9-5700 on Cotton	Control
0	95%	0
1	93%	0
5	64%	0
10	63%	0
25	52%	0

Staph. aureus FDA 209

Conclusions:

1. These bioassay data indicate that X9-5700 does not leach readily from cotton surfaces after application.

V. CONCLUSIONS

A. An adequate effluent discharge caution statement has been included on the label.

B. The term non-polluting has been deleted from the technical bulletin.

C. Data submitted indicate that X9-5700 does not leach readily from treated cotton.

D. Environmental chemistry data will not be required for the proposed use in view of the effluent discharge caution statement which appears on the label.

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