

U.S. ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF PESTICIDES PROGRAMS
REGISTRATION DIVISION (WH-567)
WASHINGTON, D.C. 20460

EPA REGISTRATION NO.

34292-3

DATE OF ISSUANCE

12 JUN 1985

TERM OF ISSUANCE

NOTICE OF PESTICIDE: REGISTRATION
 REREGISTRATION

(Under the Federal Insecticide, Fungicide,
and Rodenticide Act, as amended)

NAME OF PESTICIDE PRODUCT

Sylgard Antimicrobial Treatment

NAME AND ADDRESS OF REGISTRANT (Include ZIP code)

Dow Chemical Corporation
2200 W. Salzburg Road
Midland, MI 48640

NOTE: Changes in labeling formula differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above U.S. EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby Registered/Reregistered under the Federal Insecticide, Fungicide, and Rodenticide Act.

A copy of the labeling accepted in connection with this Registration/Reregistration is returned herewith.

Registration is in no way to be construed as an indorsement or approval of this product by this Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA sec. 3(c)(7)(A) provided that you:

1. Submit and/or cite all data required for registration/reregistration of your product under FIFRA sec. 3(c)(5) when the Agency requires all registrants of similar products to submit such data.

2. Make the labeling changes listed below before you release the product for shipment:

a. Prior to inducing vomiting, include a statement to dilute with water.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA sec. 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

A stamped copy of the label is enclosed for your records.

John H. Lee
John H. Lee

Product Manager (31)
Disinfectants Branch
Registration Division (TS-767C)

Enclosure

ATTACHMENT IS APPLICABLE

SIGNATURE OF APPROVING OFFICIAL

DATE

ACCEPTED
with COMMENTS
in EPA Letter Dated

JUN 12 1985

Under the provisions of the Federal Insecticide, Fungicide, and Rodenticide Act, this pesticide is registered under EPA Reg. No. 34292-3.



SYLGARD™

ANTIMICROBIAL TREATMENT

A SILICONE QUATERNARY AMMONIUM SALT

EPA Reg. No. 34292-3

EPA Est. 34292-MI-01

ACTIVE INGREDIENT: 3-(trimethoxysilyl) propyldimethyloctadecyl ammonium chloride

42%

INERT INGREDIENTS:

58%

100%

KEEP OUT OF REACH OF CHILDREN

CONTAINS OVER 49% METHANOL

DANGER! POISON! CAUSES SEVERE BURNS TO EYES •
METHANOL MAY CAUSE BLINDNESS • HARMFUL OR FATAL IF
SWALLOWED • VAPOR HARMFUL • AVOID BREATHING
SPRAY MIST OR VAPORS • AVOID CONTACT WITH SKIN •
FLAMMABLE

STATEMENT OF PRACTICAL TREATMENT

IF SWALLOWED: Induce vomiting, have patient lie down and keep warm. Cover eyes to exclude light, call a physician and/or poison control center. IF INHALED: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. IF ON SKIN: Flush with copious amounts of water for at least 15 minutes. IF IN EYES: Flush with copious amounts of water for at least 15 minutes and get immediate medical attention. SEE SIDE PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS

PRECAUTIONARY STATEMENTS

HAZARD TO HUMANS (& DOMESTIC ANIMALS)

DANGER! BURNS EYES. CAUSES SEVERE EYE DAMAGE AND MAY CAUSE SKIN IRRITATION. Keep out of reach of children. Do not get in eyes, on skin, or on clothing. Wear goggles or face shield and rubber gloves when handling. Use with adequate ventilation. Vapor harmful. Avoid breathing of vapor. Harmful or fatal if swallowed. Avoid contamination of food. Methanol may cause blindness.

ENVIRONMENTAL HAZARDS: This pesticide is toxic to fish. Do not discharge into lakes, streams, ponds, or public waters unless in accordance with NPDES permit. For guidance contact your regional office of the EPA.

PHYSICAL OR CHEMICAL HAZARDS

Flammable. Keep away from heat and open flame

DIRECTIONS FOR USE

FOR COMMERCIAL USE ONLY. AS A FINAL BACTERIOSTATIC, FUNGISTATIC, PRESERVATIVE FINISH IN THE PRESENCE OF MOISTURE

SYLGARD™ Antimicrobial Treatment is to be used as directed in Dow Corning's Technical Bulletins

GENERAL CLASSIFICATION: It is a violation of Federal law to use this product in a manner inconsistent with its label

S & SYLGARD™ are trademarks of Dow Corning Corporation U.S.A.

MADE IN U.S.A. 1804324 0884 PRINTED IN U.S.A.
DOW CORNING CORPORATION, MIDLAND, MICH. 48640 U.S.A.

LOT

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DOW CORNING

Materials treated with SYLGARD® Antimicrobial Treatment are preserved by the bacteriostatic and fungistatic action imparted to the surfaces. Microbial contamination may result in odor problems, discoloration and deterioration. Application of SYLGARD® Antimicrobial Treatment* to the surfaces of materials inhibits the growth of microorganisms to aid in the control of these deleterious effects. SYLGARD® Antimicrobial Treatment forms a durable, wash resistant coating on:

Carpet
Draperies
Basement Walls
Upholstery

Antimicrobial Action is exhibited on contact in the presence of moisture.

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*For Commercial Use Only

EPA No. 34292-3
EPA Est. 34292-MI-01

Type....Brand of Silicone Quaternary Amine

Physical Form....42 percent active solids in methanol.

Typical Benefits... Broad spectrum bacteriostatic, fungistatic, algistatic activity. Durable attachment to a wide variety of surfaces. Compatible, efficient, easily diluted in water.

Primary Use....Provide preservation for many types of materials against a wide variety of bacteria, fungi and yeasts.

Treat with SYLGARD® Antimicrobial Treatment:

- (1) for lasting freshness and to prevent deterioration and discoloration;
- (2) to inhibit the growth of bacteria and mildew to prolong the life of the article;
- (3) to provide a durable, non-leachable antimicrobial treatment;
- (4) to provide hygienic freshness;
- (5) to provide a treatment that is not destroyed by repeated cleaning;
- (6) to inhibit the growth of odor-causing bacteria and mildew;
- (7) to retain its freshness by resisting the growth of odor-causing bacteria and mildew (fungus);
- (8) for chemical protection to resist odors; and
- (9) as an exclusive protective treatment that... resists mildew and bacteria growth, plus being odor resistant

The information and data contained herein are based on information we believe reliable. We should thoroughly test any application and independently conduct satisfactory performance before commercialization. Suggestions of uses should not be taken as inducements to infringe any particular patent.

DOW CORNING CORPORATION, MIDLAND, MICHIGAN 48840 TELEPHONE 517 496-4000

4-3-84

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Information about Antimicrobial Agents

JUN 12 1985

Under the Federal Insecticide,
Fungicide, and Rodenticide Act
as amended, for the pesticide
registered under EPA Reg. No.
34292-3

The exclusive SYLGARD™
Antimicrobial Treatment.

DESCRIPTION

The SYLGARD™ Antimicrobial Treatment is 3 (trimethoxysilyl) propyloctadecyldimethyl ammonium chloride diluted to 42% active ingredients by weight with methanol. Alkoxysilanes of this nature have been shown to form durable bonded coatings to a number of materials (see references).

The SYLGARD Antimicrobial Treatment offers users the following features:

- Good durability - In the presence of moisture, the SYLGARD Antimicrobial Treatment is durable and imparts a broad spectrum, biostatic surface finish to a wide range of substrates. It is leach resistant, nonmigrating, and is not consumed by microorganisms.
- Broad spectrum activity - Effective against gram positive and negative bacteria, fungi, algae and yeasts.
- Increased efficiency - Through proper application, durable bacteriostatic, fungistatic and algistatic surfaces can be attained with a minimum amount of the SYLGARD Antimicrobial Treatment.

HOW TO USE

The SYLGARD Antimicrobial Treatment can be applied to organic or inorganic surfaces as a dilute aqueous solution to give 0.1 to 1.0% by weight of active ingredients. Aqueous solutions can be prepared by simply adding the antimicrobial agent to water with stirring.

SYLGARD™ ANTIMICROBIAL TREATMENT

U.S. Environmental Protection Agency Number.....	34292-3
EPA Est. 34292-MI-01	
Type	Silicone quaternary ammonium salt
Physical Form	Low viscosity liquid
Special Properties	Surface bondability
Primary Use	As a surface-durable antimicrobial treatment active against a wide variety of bacteria, fungi, algae and yeasts

Surfaces can be treated with the aqueous solution by dipping, padding or spraying until adequately wet, or applying by foaming techniques.

After applying the antimicrobial treatment, the surface should then be allowed to dry.

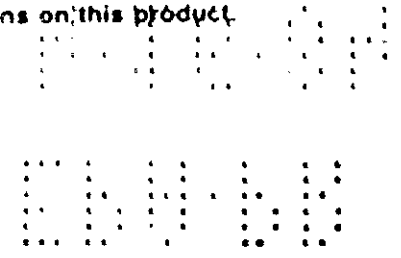
TYPICAL PROPERTIES

These values are not intended for use in preparing specifications.

	Structure	$\begin{matrix} \text{CH}_3 \\ \\ \text{---}[(\text{CH}_2)_8\text{O}]_n\text{Si}(\text{CH}_3)_2\text{N}^+\text{C}_{18}\text{H}_{37} \\ \\ \text{CH}_3 \end{matrix} \cdot \text{Cl}^-$
CTM 0208	Concentration	42% active ingredient in methanol
CTM 0176	Appearance	Light to dark amber liquid
CTM 0002	Refractive Index at 26 C (78.8 F)	1.390
CTM 0090A	Flash Point, degrees	11 C (52 F)
	Cloud Point, degrees	-3 C (26 F)
	Solubility	Miscible in all proportions with water, alcohols, ketones, esters, hydrocarbons and chlorinated hydrocarbons
	Thermal Stability	Stable to 125 C (257 F)
	Specific Gravity at 25 C (77 F)	0.87
	Freeze-Thaw Stability	Stable through 10 cycles (-17.7 to 50 C/0 to 122 F)

In most cases, CTM's (Corporate Test Methods) correspond to ASTM standard tests.

Specification Writers: Please contact Dow Corning Corporation, Midland, Michigan, before writing specifications on this product.



FISH TOXICITY

The results of a four-day static fish toxicity study using rainbow trout and bluegills are summarized below

4 Day LD_{50} Values

<u>Species</u>	<u>SYLGARD</u>	
	<u>Antimicrobial Treatment</u>	<u>Toxaphene</u>
Rainbow trout	0.56 ppm	~0.036 ppm
Bluegills	0.51 ppm	0.024 ppm

IMPORTANT INFORMATION ON STORAGE, HANDLING AND FLAMMABILITY

This product is "flammable" and "poisonous."

Storage and Shelf Life

Keep away from heat and open flame. When stored in original unopened containers at or below 25 C (77 F), the SYLGARD Antimicrobial Treatment has a shelf life of 12 months from date of shipment. Since this material is moisture sensitive, keep the container tightly closed after each use.

Handling (Danger)

Wear goggles or face shield and rubber gloves when handling the concentrated material. SYLGARD Antimicrobial Treatment, if ingested in amounts incidental to industrial handling, should pose no significant adverse health hazard. Direct contact of the undiluted material with eyes may cause serious injury. Special and particular care must be taken to prevent eye contact. In case of contact with eyes, immediately flush with large amounts of water for at least 15 minutes and get prompt medical attention. Single short-term skin exposure may cause slight irritation. Repeated or prolonged contact over

several days may cause blistering and a superficial burn. Precautions should be taken to avoid prolonged or repeated skin contact.

The SYLGARD Antimicrobial Treatment contains 50% methanol. Keep away from heat and open flame. Appropriate measures should be taken to prevent the accumulation of hazardous concentrations of methanol vapors in the work area.

Neutralization and Environmental Protection

The SYLGARD Antimicrobial Treatment, by standard BOD (biological oxygen demand) and TOD (total oxygen demand) determination, does not appear to be biodegradable. Potential harm to the environment is minimized, however, because of the minimum amount of chemical applied and its durable coupling to surfaces.

Inactivation of aqueous solutions of the SYLGARD Antimicrobial Treatment may be accomplished by initiation of one of the following:

- (A.) Addition of an anionic surfactant or detergent in quantity equivalent to that of the SYLGARD Antimicrobial Treatment solution.
- (B.) Addition of Triton X-100 nonionic detergent at a final concentration of

10,000 ppm (1.0% volume/volume) or greater to bath solutions up to 1.0% volume/volume of the SYLGARD Antimicrobial Treatment

(C.) Heating the bath solution to a minimum temperature of 160 C (320 F) for 30 minutes.

Every effort should be made to contain accidental spills of the SYLGARD Antimicrobial Treatment. Many spills may be cleaned up with rags by wiping and mopping and allowing the liquid to absorb onto the fabric. These may then be disposed of by incineration.

Acute Oral Toxicity

The SYLGARD Antimicrobial Treatment has an extremely low acute oral toxicity of $LD_{50} = 12.27 \pm 0.16$ g/kg body weight in albino rats.

Acute Skin Contact

Based on studies conducted on albino rabbits, undiluted SYLGARD Antimicrobial Treatment has a slight to moderate effect upon intact and abraded skin. A single exposure for several hours may cause slight erythema and edema. Prolonged or repeated contact, over a period of several days, may cause blistering and a superficial burn.

Repeated Skin Contact

A human repeated insult patch test has been conducted with a 2.0% aqueous solution of SYLGARD Antimicrobial Treatment on nonwoven polyester. The results of this study showed an overall incidence of skin irritation reactions to be 2/450 or 0.4%. Two subjects each reacted once to the applications of the test material; one with a very slight erythema and the other with very slight erythema and edema. There was no

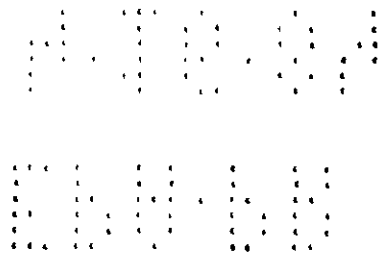
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evidence of skin sensitization noted with any of the subjects

Acute Dermal Absorption

The SYLGARD Antimicrobial Treatment has an extremely low acute dermal toxicity of LD₅₀ >7.95 g/kg body weight in albino rats. Therefore, this material does not appear to present a hazard from skin absorption under ordinary industrial handling conditions when good care and cleanliness are practiced.

Percutaneous Absorption

The SYLGARD Antimicrobial Treatment is not absorbed through the skin of rabbits. The potential hazard of the use of this material in contact with the skin is therefore considered to be insignificant.

Materials Safety Data Sheets

A Materials Safety Data Sheet, (Department of Labor, Form No. LSB-OOS-4), which gives OSHA data for this product, may be obtained by writing or calling Dow Corning Corporation, Midland, MI, 48640-0994; phone number (517) 496-4164.

Shipping Limitations

DOT Classification: Flammable.

Packaging

The SYLGARD Antimicrobial Treatment is supplied in 1-, 2-, 8-, 16- and 32-oz (28-, 57-, 227-, 454- and 908-g) and 40- and 440-lb (18.2- and 200-kg) containers, net weight.

USERS PLEASE READ

The information and data contained herein are believed to be accurate and reliable; however, it is the user's responsibility to determine suitability of

use. Since Dow Corning cannot know all of the uses to which its products may be put or the conditions of use, it makes no warranties concerning the fitness or suitability of its products for a particular use or purpose.

You should thoroughly test any proposed use of our products and independently conclude satisfactory performance in your application. Likewise, if the manner in which our products are used requires governmental approval or clearance, you must obtain it.

Dow Corning warrants only that its products will meet its specifications. There is no warranty of merchantability or fitness for use, nor any other express or implied warranty. The user's exclusive remedy and Dow Corning's sole liability is limited to refund of the purchase price or replacement of any product shown to be otherwise than as warranted. Dow Corning will not be liable for incidental or consequential damages of any kind.

Suggestions of uses should not be taken as inducements to infringe any patents.

ADDITIONAL INFORMATION

additional information on specific applications,

can be obtained by writing Dow Corning Corporation, New Ventures Business, Midland, MI, 48640-0994.

REFERENCES

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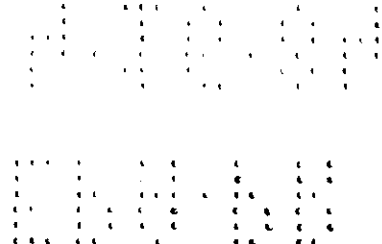
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MIDLAND, MICHIGAN 48640

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