RENDER

TRADEMARK

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Quaternary Germicidal Detergent

Render is a broad spectrum germicide for mopping or spraying hard surfaces.

Render possesses three-way disinfecting action when used as a detergent-germicide: (1) disinfecting the surface, (2) inhibiting the growth of bacteria, and (3) transforming mops, cloths, or sponges into self-sanitizing articles.

The germicidal action of Render is effective in destroying a variety of bacteria, yeasts and molds when tested by the A.O.A.C. Use-Dilution Test and other procedures.

FEATURES	BENEFITS
Triple-action detergent	Cleans, disinfects and self-sanitizes cleaning articles in one operation. No additives necessary.
Broad spectrum germicide	Kills most bacteria, molds and yeasts.
Simple application	Use solutions can be easily and quickly prepared.
Non-corrosive	Safe on wood, painted surfaces, plastic, floor tile, metal surfaces and conductive floors.

Wyandotte RENDER

MARKETS:

- Hospitals
- Institutions
- Convalescent Homes
- Clinics
- Restaurants
- Schools
- Office Buildings
- Transportation Terminals
- Industrial Plants
- Public Buildings

DIRECTIONS FOR USE:

General cleaning and disinfecting of hard surfaces. Add Render at 2 ounces per gallon of water (750 ppm quaternary). Thoroughly wet surface to be treated.

For heavy duty cleaning or spray disinfecting, dilute Render at 4 ounces per gallon of water (1500 ppm quaternary). Thoroughly wet surface to be treated.

Sanitizing—Dairy and Food Processing Equipment. Clean surface and rinse to insure freedom from soil. Sanitize equipment with ⅔ ounces of Render per gallon of water (250 ppm quaternary). Food contact surfaces must be rinsed with potable water prior to use.

Mildew Control. Clean surface by brushing with 2 ounces of Render per gallon of water (750 ppm quaternary) to remove visible mildew growth. Rinse and allow to dry. Spray or mop surfaces until damp with a 4 ounce per gallon (1500 quaternary) solution of Render. Do not rinse. Repeat treatment after 21 days or when surfaces become soiled, for control of mildew.

USE DILUTIONS:

Application	Fluid Oz. Per 1 gal.	Fluid Oz. Per 5 gal.	ppm Quaternary
Disinfecting and Cleaning*	2	10	750
Spray Disinfecting*	4	20	1500
Sanitizing*	⅔	3⅓	250
Mildew Control*	4	20	1500

**Detailed bacteriological data is available upon request.*

DANGER **KEEP OUT OF REACH OF CHILDREN.**

Undiluted Render causes skin irritation and damage to the eyes. Avoid contact with skin and eyes. Wear goggles when handling concentrate. For eyes, flush immediately with plenty of water and obtain medical attention. Avoid contamination of food.

Wyandotte CHEMICALS CORPORATION

J. B. FORD DIVISION, WYANDOTTE, MICHIGAN 48192

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BASF

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RENDER

Quaternary Germicidal Detergent

PURPOSE AND USE

For cleaning, disinfecting, and deodorizing all types of hard surfaces:

- HOSPITALS
- NURSING HOMES
- INSTITUTIONS
- HOTELS
- MOTELS
- RESTAURANTS
- SCHOOLS
- DISHWASHING ROOMS
- REST ROOMS
- **FLOORS AND WALLS**
- SHOWER ROOMS
- FOOD SERVICE AREAS
- FOOD STORAGE AREAS
- REFRIGERATED STORAGE AREAS
- GARBAGE AREAS AND CANS
- BEDS, FURNITURE

Render possesses three way disinfecting action when used as a detergent-germicide on hard surfaces by disinfecting the surface, prohibiting bacterial buildup in the wash solution, and transforming mops, cloths, or sponges into self-sanitizing articles.

ADVANTAGES OF RENDER

1. Rapid disinfecting action combined with efficient cleaning capacity.
2. Broad spectrum disinfecting action kills most bacteria, molds and yeasts.
3. Does not reduce conductivity of floors.
4. Safe on wood, paint, plastic, floor tile, wax and floor polish finishes, and metal surfaces.
5. **USDA Reg. No.** 662-44
6. **Render contains no perfume. The use solution is odorless.**

EFFECTIVENESS

Render is a broad spectrum germicide for mopping or spraying hard surfaces, and may be used at lower concentrations as a sanitizer and light duty cleaning agent. The germicidal action of Render is effective in destroying a variety of bacteria, yeasts, and molds when tested by the AOAC Use-Dilution Test and other procedures.

To obtain the broad spectrum disinfecting as shown in TABLE I and TABLE II we recommend use of Render at 2 oz/per gallon of water (750ppm of active agent).

Render destroys mold and mildew organisms and prevents regrowth for up to 21 days on painted wood, sealed concrete, tile and metal surfaces. See use directions for specific instructions.

TABLE I

AOAC USE-DILUTION TEST - 10th EDITION, 1965
-RENDER at 2 oz/Gal. (750ppm Active Agent)

BACTERIA	PHENOL RESISTANCE OF ORGANISM	NUMBER OF TESTS SHOWING COMPLETE DESTRUCTION OF ORGANISM(a)
Brevibacterium ammoniagenes (ATCC #[illegible]1)	1:110	10/10
Escherichia coli (ATCC #11229)	1:90	10/10
Proteus vulgaris (ATCC #[illegible]27)	1:95	10/10
Pseudomonas aeruginosa (ATCC #15442)	1:80	10/10
Salmonella choleraesuis (ATCC #10708)	1:90	10/10
Salmonella typhosa (ATCC #[illegible]539)	1:100	10/10
Staphylococcus aureus (ATCC #[illegible]37)	1:60	10/10

TABLE I (Cont.)

YEASTS	ORGANISM	NUMBER OF TESTS - DESTRUCTION OF ORGANISM(a)
Saccharomycetes cerevisiae (BREWERS STRAIN)	1:25	10/10
Saccharomycetes cerevisiae (DISTILLERS STRAIN)	1:100	10/10
Rhodotorula ruba (ATC[illegible] #9449)	1:[illegible]0	10/10

(a -- 10/10 means ten tests showing no surviving organisms in ten tubes tested.

TABLE II

AOAC FUNGICIDAL TEST - 10th EDITION, 1965
RENDER at 2 oz/Gal.(750ppm Quaternary)

MOLD	PHENOL RESISTANCE	TIME REQUIRED TO DESTROY ALL ORGANISMS		
		5 Min.	10 Min.	15 Min.
Trichophyton mentagrophytes (ATCC #[illegible]) (Athlete's foot organism)	1:45	+	-	-
Penicillium italicum (ATCC #10[illegible])	1:75	-	-	-
Aspergillus niger (ATCC #[illegible])	1:70	+	-	-

NOTE: + - Growth of organism
- - No growth of organism

SPRAYING

The germicidal activity of RENDER has been demonstrated when applied as a spray when diluted four ounces per gallon (1500 ppm) by destroying all contaminating Staphylococcus aureus, Salmonella choleraesuis, and Trichophyton mentagrophytes in the Official AOAC Germicidal Spray Test.

HARD WATER TOLERANCE

Solutions of Render tested by the Germicidal Detergents and Sanitizers Test (Chambers Test), AOAC, 10th Edition, have been shown to possess rapid sanitizing capacity in accordance with the criteria of Appendix F, Grade "A" Pasteurized Milk Ordnance, U.S.P.H.S., 1965 at a dilution of 2/3 ounce per gallon (250 ppm quaternary germicide) in water up to 750 ppm hardness.

CONTROL OF BACTERIA IN MOP WATER

In addition to broad spectrum disinfection on hard surfaces, use solutions of Render inhibits the growth of microorganisms in mop water. Duplicate one-half sections of a high traffic hallway were mopped with a solution of Render and a detergent formula containing all cleaning agents except the quaternary germicide protion of Render. The results of the bacteriological examinations are shown in TABLE III.

TABLE III

BACTERIA COUNT OF MOP WATER
(Numbers denote organisms per ml. of water after neutralization of germicide)

	WATER BEFORE MOPPING		WATER IMMEDIATELY AFTER MOPPING	
	BACTERIA	YEAST AND MOLDS	BACTERIA	YEASTS AND MOLDS
Detergent Formula Without Quaternary	None	None	1,200,000	21,00
RENDER (2 oz./Gal.)	None	1	*	

CONTROL OF BACTERIA ON CLEANING EQUIPMENT

Cleaning and disinfecting with Render automatically provides a SELF-SANITIZING capacity to mops, sponges, or clothes used in the cleaning process which is not removed except by thorough laundering. This additional action of Render prevents the build-up of high bacterial contamination levels which could re-contaminate surfaces on subsequent use and prevents the development of unpleasant odors in cleaning equipment. TABLE IV shows the results of standard tests for antimicrobial action as prescribed by the American Association of Textile Chemists and Colorists after a single cleaning operation with Render and washing in clean, warm water. Duplicate fabric samples were washed in the detergent formula similar to Render without quaternary ammonium compound.

TABLE IV

CONTROL OF BACTERIA ON CLEANING EQUIPMENT

ZONE OF INHIBITION IN MILLIMETERS - AATCC METHOD [illegible]-T, 1[illegible]

TEST SAMPLE	Staphylococcus aureus (ATCC #[illegible])		Escherichia coli (ATCC #[illegible])	
	WASHED IN NON-GERMICIDAL DETERGENT	WASHED IN RENDER	WASHED IN NON-GERMICIDAL DETERGENT	WASHED IN RENDER
COTTON MOP ONE STRAND	NO ZONE	5.0mm.	NO ZONE	[illegible]mm.
CELLULOSE SPONGE	NO ZONE	2.5mm.	NO ZONE	1.[illegible]mm.
COTTON CLOTH	NO ZONE	[illegible].0mm.	NO ZONE	[illegible]mm.

(ILLUSTRATION NO. [illegible] shows the activity of treated and untreated mop strands in the Zone of Inhibition test.)

TABLE IV (Continued)

SELF SANITIZING EFFECT ON CLEANING EQUIPMENT
AATCC METHOD 100-T, 1[illegible]

TEST SAMPLE	VIABLE BACTERIA AFTER INOCULATION, INCUBATION AND ELUTION	
	Staphylococcus aureus (ATCC #[illegible])	Escherichia coli (ATCC #[illegible])
MOP STRAND USED IN RENDER	less than 1[illegible] organisms	less than 1[illegible] organisms
MOP STRAND USED WITH CONTROL DETERGENT	2[illegible],000,000 organisms	[illegible],2[illegible],[illegible]00 organisms
COTTON CLOTH USED IN RENDER	less than 1[illegible] organisms	less than 1[illegible] organisms
COTTON CLOTH USED IN CONTROL DETERGENT	200,000,000 organisms	[illegible],[illegible]0,000,0[illegible] organisms

TABLE IV(Cont.)

Initial number of bacteria used to contaminate fabric:

Staphylococcus aureus - 450,000
Escherichia coli - 240,000

TOXICOLOGY

Animal studies conducted by an independent testing laboratory indicate that undiluted Render is classed as non-toxic by ingestion; is not a primary skin irritant or corrosive material; but is an eye irritant as defined by the Federal Hazardous Substances Labeling Act.

CLEANING EFFICIENCY

The superior cleaning efficiency of Render was measured in standard Gardner Washability Tests to determine the amount of highly colored artificial soil(crankcase oil, iron oxide, carbon black, clay) removed from white vinyl floor covering. The results are shown in TABLE V.

TABLE V.

GARDNER WASHABILITY TEST RESULTS

FORMULA	RECOMMENDED USE CONCENTRATION	% SOIL REMOVED
RENDER	2 oz./Gal.	1
RENDER	4 oz./Gal.	
COMPETITIVE QUATERNARY DETERGENT	1/2 oz./Gal.(a)	
COMPETITIVE QUATERNARY DETERGENT	1 oz./Gal. (a)	

(a) RECOMMENDED USE DILUTION BY COMPETITIVE COMPANY.

EFFECTS ON CONDUCTIVE FLOORING

Duplicate test panels of conductive floor covering were flooded with a solution containing four ounces per gallon of Render and a control solution of distilled water and allowed to dry without rinsing for 1[illegible] consecutive applications. No change was detected in resistance to current flow when each panel was measured daily with a Biddle Conductivity Tester prior to application of the test solutions. Conductivity of test panels conformed to the standards of the National Board of Fire Underwriters. (125,000 ohms before and 120,000 ohms after.)

CORROSION

Render is safe on wood, paint, plastic, porcelain, and all hard surface floor coverings. Render will not strip non-detergent resistant floor polish or affect the slip resistance characteristic of Wyandotte floor polishes. Most metal surfaces are unaffected by solutions of Render. Unprotected aluminum may be discolored by contact with use solutions of Render at 140°F after four hours contact.

USE DIRECTIONS

General Cleaning and Disinfecting of Hard Surfaces -- Wash with RENDER
2 ounces per gallon of water (750 ppm quaternary).

Heavy-Duty Cleaning or Spray Disinfection -- Dilute four ounces RENDER per gallon of water (1500 ppm quaternary). Thoroughly wet surface to be treated.

Sanitizing -- Dairy and Food Processing Equipment
Clean surface and rinse to insure freedom from soil. Sanitize equipment with RENDER at 2/3 ounce per gallon of water (250 ppm quaternary). Food contact surfaces must be rinsed with potable water prior to use.

Mildew Control -- Clean surface by brushing with 2 ounces of RENDER (750 ppm quaternary) per gallon of water, to remove visible mildew growth. Rinse and allow to dry. Spray or mop surfaces until damp with a 4 ounce per gallon (1500 ppm quaternary) solution of RENDER. Do not rinse. Repeat treatment after 21 days or when surfaces become soiled for control of mildew.

USE DILUTIONS

APPLICATION	FLUID OUNCES PER 1 Gallon	FLUID OUNCES PER 5 Gallons	ppm QUATERNARY
DISINFECTION AND CLEANING	2	10	750
SPRAY DISINFECTION	4	20	1500
SANITIZING	2/3	3-1/3	250
MILDEW CONTROL	4	20	1500

PHYSICAL PROPERTIES

Render is a purple, non-viscous liquid with a pleasant odor. It is not affected by hot water. Render will freeze at 2[illegible]°F., but will return to its original condition with no loss of effectiveness.

CHEMICAL PROPERTIES

The pH of undiluted Render is [illegible], and diluted to two ounces per gallon it is [illegible]. Specific gravity at 25°C. is 1.022. The viscosity is about the same as water.

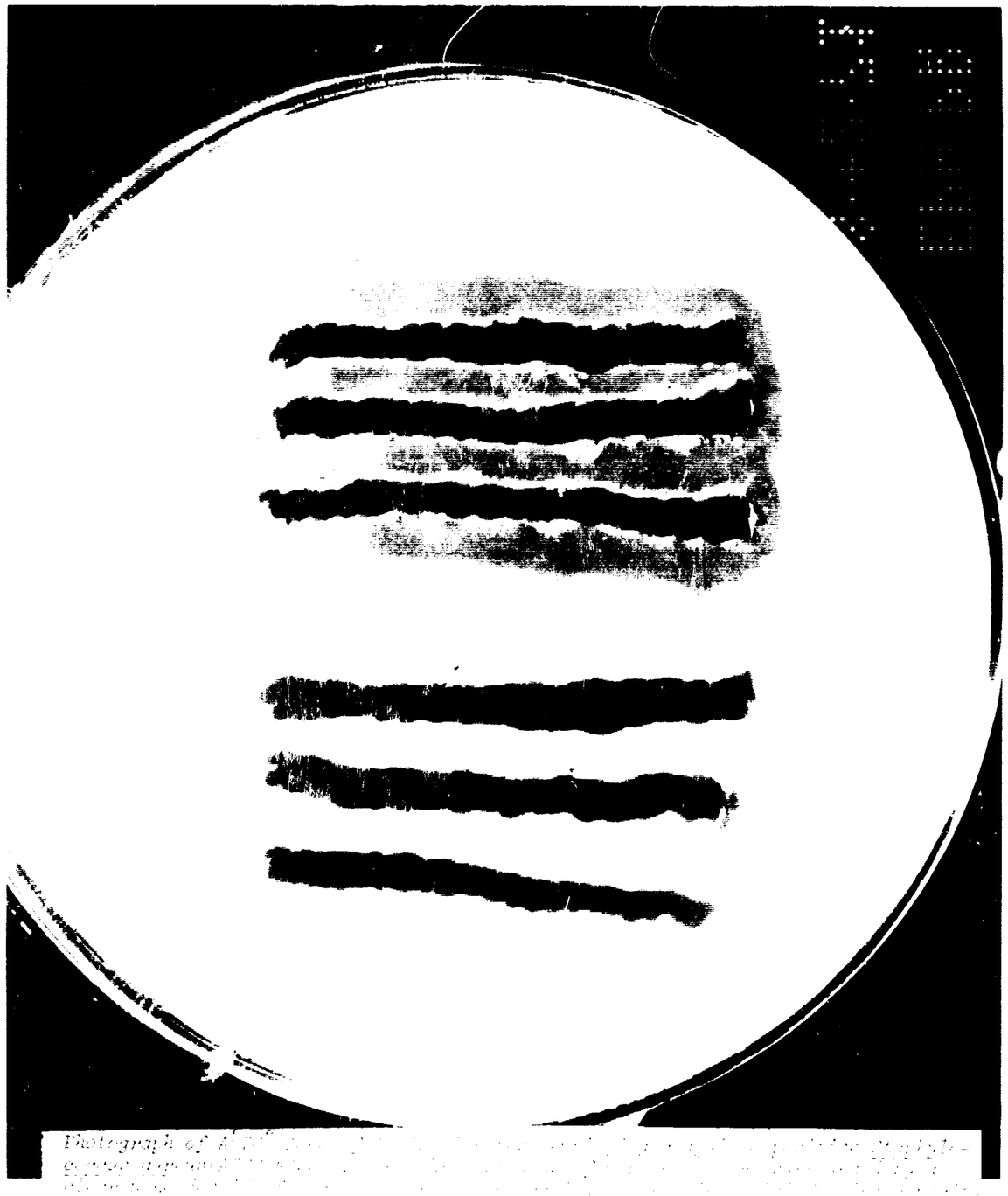
DANGER KEEP OUT OF REACH OF CHILDREN.

Undiluted Render--causes skin irritation and damage to the eyes. Avoid contact with skin and eyes. Wear goggles when handling concentrate. For eyes, flush immediately with plenty of water and obtain medical attention. Avoid contamination of food.

INGREDIENTS

ACTIVE AGENTS

n-Alkyl Dimethyl Benzyl Ammonium Chloride (60% C_{14}, 30% C_{12}, 10% C_{16})	[illegible]
Tetrasodium Ethylenediaminetetraacetate	[illegible]
Inert Ingredients (Including Cleaning Agents)	[illegible]
	100.0



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