(CENTER PANEL)

Onyxide 3300

**Concentrated Germicide and Fungicide**

**Active Ingredient:**

| | |
|---|---|
| n-Alkyl (40% $C_{12}$, 50% $C_{14}$, 10% $C_{16}$) Dimethyl Benzyl Ammonium Saccharinate | 95% |
| **Inert Ingredient:** | 5% |

**For Formulation Use Only** **USDA Reg. No. 1839-**


Onyx Chemical Company
Division of Millmaster Onyx Corporation
190 Warren Street
Jersey City 2, New Jersey


**CAUTION:** Keep out of reach of children. See side panel for additional precautionary statements

(LEFT PANEL)

Onyxide 3300 is a cationic germicide
Onyxide 3300 in recommended use dilutions is non-corrosive

(RIGHT PANEL)

**CAUTION:** Harmful if swallowed. Avoid contamination of food and foodstuffs. Avoid getting concentrate on skin and in eyes. In case of contact, wash thoroughly with water. If irritation persists, get medical attention. Handle with care. Wash thoroughly after using product.

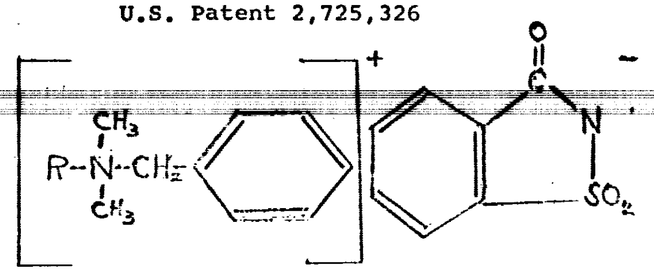
Onyxide 3300 is packaged in bulk and net weight will be stenciled on drums.

ONYX CHEMICALS

CNYXIDE 3300

Alkyl (50% $C_{14}$, 40% $C_{12}$, 10% $C_{16}$) Dimethyl Benzyl Ammonium Saccharinate

U.S. Patent 2,725,326



USDA Reg. No. 1839-X

USDA Reg. No. 1839-X

GENERAL DESCRIPTION:

Onyxide 3300 is a 95% active, white ~~powder having high~~ microbiocidal activity. Unlike conventional quaternary halides, Onyxide 3300 is a quaternary saccharinate complex. Advantages derived from this new structure include:

1. High microbiocidal activity
2. Active in many different types of surfactant systems
3. ~~Low toxicity~~
4. Low eye and skin irritation
5. Sweet taste
6. Thermal stability
7. Ease of formulation
   a) non-corrosive
   b) free-flowing concentrated powder
   c) chemically compatible in all ionic systems

ACCEPTED

ONYX CHEMICAL COMPANY
Division of Millmaster Onyx Corporation
JERSEY CITY 2, NEW JERSEY

SUGGESTED USES:

Onyxide 3300 is suggested for use in cosmetic and pharmaceutical formulations, hair preparations, detergent-sanitizer-disinfectants, and oral applications.

Cosmetic Formulations

Onyxide 3300 is bacteriologically compatible in nonionic and cationic cosmetic formulations. In addition, Onyxide 3300 demonstrates bacteriostatic activity against gram positive bacteria in anionics such as sodium lauryl sulfate and triethanolamine lauryl sulfate.

Hair Preparations

The high microbiocidal activity of Onyxide 3300 is especially significant versus P. ovale and S. aureus. Static activity of Onyxide 3300 against these organisms has been demonstrated in creme paste and clear gel formulations. Levels as high as 0.5% have been used without chemical incompatibility. A significant advantage in using Onyxide 3300 for hair preparations is its low eye and skin irritation.

Detergent-Disinfectants

Onyxide 3300 can be readily solubilized in alcohol-water combinations or in propylene glycol. It is bacteriologically compatible in nonionic and cationic surfactants. Levels as high as 1% of Onyxide 3300 can be easily formulated into an aerosol contact disinfectant, air sanitizer, or detergent-disinfectant. Onyxide 3300 is non-corrosive to metal containers.

Oral Applications

Onyxide 3300 is readily soluble in ethanol for incorporation into a mouthwash. Its low toxicity and sweet taste make Onyxide 3300 most desirable as an active ingredient for this application. Other possible uses include dentifices and denture cleaners.



CHEMICAL AND PHYSICAL PROPERTIES (95% PURE)

| | |
|---|---|
| Melting Point | 73-75°C |
| Decomposition Point | 220°C |

Solubilities (approximate)

| | |
|---|---|
| Water | 0.01% or less |
| Ethanol | sol. |
| Isopropanol | sol. |
| Ethylene Glycol | 5% |
| Pine Oil | ins. |
| Glycerine | ins. |
| Methyl Cellosolve | sol. |
| Mineral Oil | ins. |
| Carbon Tetrachloride | ins. |
| Benzene | 10% |
| Ethanol:water (50:50) | 50% |
| Isopropanol:water(40:60) | 25% |
| Butyl Carbitol:water (50:50) | sol. |

Ins = Insoluble
Sol = Soluble in all proportions



TYPICAL ANALYSIS

| | |
|---|---|
| Activity | 95% min. |
| Inert Ingredients | 5.0% |

BACTERIOLOGICAL PROPERTIES

Broth Inhibition
(Static Levels, ppm)

| Organism | Inhibition | Growth |
|---|---|---|
| Escherichia coli (ATCC No. 11229) | 5 | 2.5 |
| Pseudomonas aeruginosa (PRD-10 strain) | 100 | 75 |
| Staphylococcus aureus (ATCC #6538) | 2.5 | 1.0 |
| Streptococcus faecalis (PRD strain) | 1.0 | 0.5 |
| Aspergillis niger (IPC #144) | 50 | 25 |
| Penicillium expansum (IPC #126) | 5 | 2.5 |
| Candida albicans (ATCC #752) | 10 | 1.0 |
| Bacillus mycoides (ATCC #6462) | 10 | 1.0 |
| Aerobacter aerogenes (ATCC #9621) | 10 | 1.0 |

Agar Cup Plate
(at 0.1% active)

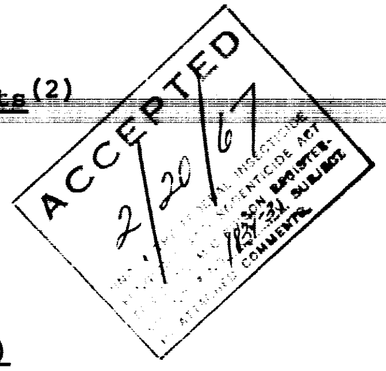
| | |
|---|---|
| P. ovale | 32 mm average zone of inhibition |

Average Phenol Coefficient[1]

| | |
|---|---|
| Staphylococcus aureus (ATCC #6538 | 958 |
| Salmonella typhosa (ATCC #6539) | 588 |

Guaranteed Minimum Phenol Coefficients[2]

| | |
|---|---|
| Staphlococcus aureus (ATCC #6538) | 725 |
| Salmonella typhosa (ATCC #6539) | 450 |




AOAC Use Dilution (Tenth Edition)

350 ppm against Staphylococcus aureus (ATCC #6538)
350 ppm against Salmonella choleraesuis (ATCC #10708)

Toxicity

| | |
|---|---|
| Acute Oral ($LD_{50}$) | 1130 mg/kg |
| Dermatological[3] | |
| Primary Irritation | negative |
| Fatiguing Irritation | negative |
| Sensitization | negative |
| Draize Eye Irritation | negative, not ocular irritant |

(1) Official Method of Analysis of the Association of Official Agricultural Chemists, 10th Ed., 1965, p.60

(2) Statistically derived from experimental results to provide values at a 95% confidence limit.

(3) Repeated Insult Patch Test with 5% W/V solution in dimethyl phthalate on human volunteers (Shelanski & Shelanski, Proceedings in Toilet Good Assoc., No. 19; May 1953).



AVAILABILITY:

Onyxide 3300 is available in commercial quantities in standard 30 gallon foil laminated Leverpak containers, weighing approximately 100 pounds net.

WARRANTY:

The data and suggested formulations in this bulletin are based on information believed to be reliable and are offered solely for evaluation, investigation and verification of the numerous factors affecting results. Onyx products are sold with the understanding the purchasers will make their own tests to determine the suitability of these products for their particular use. The corporation assumes no liability or responsibility for any damage to person or property resulting from or incident to the use of its products. Statements concerning the use of ~~Mildmaster~~ Onyx products are not to be construed as recommending the infringement of any patent, and no liability for infringement arising out of any such use is assumed.