

GLUTEX™ GQ1 Sanitizer

CAS Reg. No. 111-30-8

General

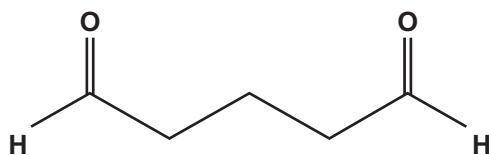
GLUTEX™ products are a range of specially formulated sanitizers for farm animal and poultry housing facilities and associated equipment, as well as industrial equipment and buildings. GLUTEX Sanitizers combine the powerful antimicrobial action of glutaraldehyde with other efficacy-enhancing additives.

Key Benefits

- Two active ingredients for enhanced fungal efficacy
- Proven to effectively sanitize hatcheries with efficacy against key pathogens such as *Salmonella cholerasuis*, *Pseudomonas aeruginosa*, *Aspergillus fumigatus*, and more. For a full list of organisms please see the EPA product label.
- No tacky buildup on treated surfaces, eliminating the need for time-consuming and costly removal and cleanup.
- No formaldehyde or formaldehyde release from this formulation. Glutaraldehyde is not classified as a carcinogen.
- Reduces contamination on a wide variety of surfaces such as stainless steel, aluminum, painted concrete, plastic, and glazed tile.
- Product can be diluted with a wide-range of water hardness. Testing has shown ease of dilution up to 1200 ppm hardness.
- Internal laboratory testing resulted in lower corrosion to metals than the control of water applied in the testing on metals such as low carbon steel, galvanized steel and Galvaneel steel.
- Glutaraldehyde is readily biodegradable according to OECD 301A test method.
- Concentrated liquid formulation makes product dilution simple and easy for farm use.
- GLUTEX GQ1 Sanitizer is extremely effective in animal biosecurity and can be used at concentrations as low as 0.45 oz active per gallon of water.

Availability

NOTE: Not all GLUTEX products, applications and/or uses are registered and approved in all regions/countries/states. Please check with your local Dow Biocides representative for up-to-date information.

Structure**Physical Properties**

The following are typical properties of GLUTEX GQ1 Sanitizer; **they are not to be considered product specifications.**

| | |
|---|--|
| Appearance | Transparent colorless to pale yellow |
| Active, % Glutaraldehyde (w/w) | 14 |
| % N-alkyldimethylbenzyl ammonium chloride (w/w) | 2.5 |
| pH @ 25°C: | 3.1 to 4.5 |
| Solubility in Water, 20°C: | Miscible |
| Boiling Point: | 100.5°C/213°F |
| Freezing Point: | -3°C/27°F |
| Specific Gravity, @ 20/20°C: | 1.035 |
| Vapor Pressure @ 20°C: | 0.2 mm Hg based on glutaraldehyde (0.27 hPa) |

Antimicrobial Activity

Since GLUTEX™ GQ1 Sanitizer also contains a quaternary ammonium salt compound, a separate series of effectiveness tests was conducted. At concentrations of 600¹ ppm and 1200² ppm total actives, GLUTEX GQ1 Sanitizer produced a 99.9% reduction (three log) reduction over the parallel control in five minutes.

AOAC Germicidal and Detergent Sanitizer Test

Contact Temperature 25°C/76°F

| Microorganism | Microorganism Level (CFU/mL) | |
|---|------------------------------|------------------------|
| | Initial | Surviving After 5 min. |
| <i>Klebsiella pneumoniae</i> ATCC 4352 | 1.1x10 ⁵ | 1.0x10 ^{1*} |
| <i>Salmonella choleraesuis</i> ATCC 10708 | 3.4x10 ⁴ | 1.0x10 ¹ |
| <i>Staphylococcus aureus</i> ATCC 6538 | 7.0x10 ⁴ | 1.0x10 ¹ |
| <i>Pseudomonas aeruginosa</i> ATCC 15GQ2 | 2.5x10 ⁴ | 1.0x10 ¹ |

*1.0x10¹ represents no recovery from the lowest dilution.

¹600 ppm total actives = 510 ppm glutaraldehyde and 90 ppm alkyl dimethyl benzyl ammonium chloride

²1200 ppm total actives = 1020 ppm glutaraldehyde and 180 ppm alkyl dimethyl benzyl ammonium chloride

GLUTEX GQ1 Sanitizer was evaluated using the EPA Sanitizer Test for Non-Food-Contact Surfaces against *Aspergillus fumigatus*, ATCC 24547.

GLUTEX GQ1 Sanitizer, at a contact time of five minutes and a concentration of 600¹ ppm, successfully reduced fungal counts of a hyphae suspension by three logs.

At a contact time of five minutes and a concentration of 1200² ppm, GLUTEX GQ1 Sanitizer effectively reduced fungal counts of a spore suspension by three logs. All testing was performed at 25°C/76°F.

| Microorganism | Microorganism Level (CFU/mL) | |
|--|------------------------------|------------------------|
| | Initial | Surviving After 5 min. |
| <i>Aspergillus fumigatus</i> hyphae ATCC 24547 | 6.7x10 ⁴ | 1.0x10 ^{1*} |
| <i>Aspergillus fumigatus</i> spores ATCC 24547 | 9.0x10 ⁴ | 1.0x10 ¹ |

*1.0x10¹ represents no recovery from the lowest dilution.

¹600 ppm total actives = 510 ppm glutaraldehyde and 90 ppm alkyl dimethyl benzyl ammonium chloride

²1200 ppm total actives = 1020 ppm glutaraldehyde and 180 ppm alkyl dimethyl benzyl ammonium chloride

Contact temperature was 25°C/76°F. Results expressed as conidia/carrier.

GLUTEX GQ1 Sanitizer

| Virus | Control Titer | Reduction in Titer* | Contact Time, min. | GA, Conc. |
|--|---------------|---------------------|--------------------|-----------|
| <i>Avian Influenza Virus (H5N1)</i> | 6.5 | ≥ 4.5 | 5 | 500 |
| <i>Avian Influenza Virus (H6N2)</i> | 8.3 | ≥ 7.3 | 5 | 600** |
| <i>Human Corona Virus</i> (the viral type associated with SARS) | 5.8 | ≥ 3.3 | 5 | 500 |
| <i>Infectious Bursal Disease Virus</i> | 7.0 | ≥ 6.0 | 5 | 600** |
| <i>Porcine Circo Virus (PCV)</i> | 5.5 | ≥ 4.0 | 5 | 1000 |

*No virus remaining and >3-log reduction in titer in 10 min is required to pass the test.

**Total active.

Compatibility

GLUTEX™ Sanitizers are suitable for use on many surfaces. At the recommended use-dilution, they are compatible with all common materials of construction that can tolerate exposure to water. The following materials were subjected to 25 spray/dry cycles at 25°C/76°F without rinsing. No detectable changes, relative to duplicate materials sprayed with water, occurred.

- Aluminum
- Brass
- Chrome-Plated Steel
- Copper
- Stainless Steel
- Glass
- Glazed Ceramic Tile
- Latex Rubber
- Polyethylene

Effectiveness on Materials of Construction

GLUTEX Sanitizers retain efficacy when used on most common materials of construction. When tested according to the EPA Sanitizer Test for Inanimate, Non-Food-Contact Surfaces, GLUTEX products effectively reduced microorganisms on aluminum, stainless steel, polyethylene, galvanized steel and glazed ceramic tile at the recommended use-dilution.

Applications

GLUTEX products effectively sanitize hard surfaces when applied to pre-cleaned surfaces. They can be easily diluted with available water without concern for water hardness. Mopping or spraying are effective application techniques. GLUTEX Sanitizers have demonstrated effectiveness in controlling microorganisms in farm animal and poultry housing facilities, and on industrial equipment and in buildings.

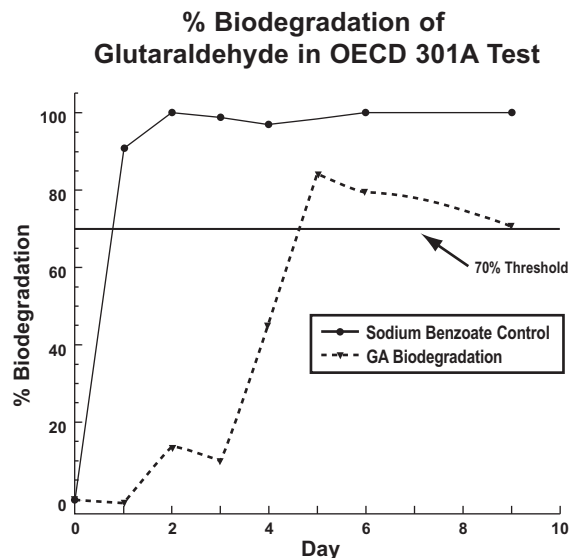
GLUTEX is ideal for sanitizing hatchers and setters, as well as egg rooms, tray washers, animal processing areas, barns and farrowing areas, farm equipment, transportation vehicles, and general farm housing areas.

Glutaraldehyde and the Environment

Many studies have been performed on glutaraldehyde to determine its potential to biodegrade in the environment.

The OECD 301 series of biodegradation protocols are designed to determine the biodegradation potential of substances under stringent conditions. In one such biodegradation test, glutaraldehyde met and exceeded the OECD ready biodegradability classification criteria and was found to be readily biodegradable.

% Biodegradation of Glutaraldehyde in OECD 301A Test



See SDS for full safety information.

Safe Handling, Storage, and Disposal

When applying GLUTEX™, it is important to wear the appropriate protective equipment. This equipment includes proper gloves, chemical goggles, coveralls, and when necessary, respiratory equipment. When applying glutaraldehyde sanitizers by spraying, it is necessary to wear an organic vapor cartridge respirator with a particulate pre-filter (type AP2 in Europe). Do not spray or aerosolize the undiluted form of the product. Full personal protective equipment (including skin covering and full-face SCBA respirator) is required for dilutions or mixtures of the product used in a spray application. **Please refer to the product label for specific precautions and use directions.** Further information and precautions regarding the handling, storage, and disposal of GLUTEX can be obtained by consulting the latest Dow Safety Data Sheet and the *Glutaraldehyde Safe Handling and Storage Guide*, form number 253-01338, available from your Dow representative or the Dow Customer Information Group. See the last page of this piece of literature for addresses and phone numbers.

For spills, chemical deactivation of glutaraldehyde is recommended using the following guidelines:

With Sodium Bisulfite:

An effective chemical method that can be used to deactivate concentrations of glutaraldehyde (up to 5%) is by addition of sodium bisulfite (SBS). In order to assure rapid, complete deactivation, it is recommended that 2-3 parts (by weight) of SBS be added per part of active glutaraldehyde. Addition of 2-3 parts SBS will rapidly reduce the concentration of glutaraldehyde in solution to less than 2 ppm active within five minutes at room temperature. The remaining solution can then be disposed of by appropriate means. Concentrations higher than 5% should be absorbed on the appropriate absorbant material, collected, and incinerated.

The following table illustrates the amounts of SBS needed for different concentrations of glutaraldehyde:

| Water Volume gal (L) | Glutaraldehyde active level (ppm) | SBS required oz. (g) | Amount of 30% SBS solution required oz. (g) |
|----------------------|-----------------------------------|----------------------|---|
| 100 (380) | 20 | 0.53-0.8 (15-23) | 1.77-2.67 (50-77) |
| 500 (1900) | 100 | 13.3-20 (380-570) | 44-67 (1267-1900) |
| 5 (19) | 20,000 (2%) | 26.7-40 (760-1140) | 89-133 (2533-3800) |

Note: If 30% SBS is unavailable, it can be replaced with a 30% sodium metabisulfite solution and give the same results with half the amount. Alternatively, a 15% solution of sodium metabisulfite can be used at the same levels as SBS listed in the table above.

Product Safety

When considering the use of any Dow product in a particular application, you should review the latest Safety Data Sheet (SDS) and ensure that the use you intend can be accomplished safely. For SDS and other product safety information, contact the Dow Customer Information Group. Before handling any other products mentioned in the text, you should obtain available product safety information and take necessary steps to ensure safety of use.

No chemical should be used as or in a food, drug, medical device, or cosmetic, or in a product or process in which it may contact a food, drug, medical device, or cosmetic until the user has determined the suitability and legality of the use. Since government regulations and use conditions are subject to change, it is the user's responsibility to determine that this information is appropriate and suitable under current, applicable laws and regulations.

The Dow Chemical Company requests that the customer read, understand, and comply with the information contained in this publication and the current Safety Data Sheet. The customer should furnish the information in this publication to its employees, contractors, and customers, or any other users of the product(s), and request that they do the same.

Product Stewardship

GLUTEX™ is the new name for the UCARSAN™ 414 product, used in animal housing biosecurity. Product specifications have not changed. We will continue to supply UCARSAN as we register the GLUTEX brand name in individual countries. Ask your Dow Biocides representative for information on product availability in your region.

Dow Biocides encourages its customers to review their applications of Dow Biocides products from the standpoint of human health and environmental quality. To help ensure that Dow Biocides products are not used in ways for which they are not intended or tested, Dow Biocides personnel are willing to assist customers in dealing with ecological and product safety considerations. Contact your representative if you need any assistance or information. When considering the use of any Dow product in a particular application, review the latest Safety Data Sheet and country-specific product label to ensure the intended use is within the scope of approved uses and can be accomplished safely. Before handling any of the products mentioned in the text, obtain available product safety information and take necessary steps to ensure safety of use.

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