



German metal Surface treatment Chemicals Co.
Research and Development Division
Detergent and disinfectant Department

MATERIAL SAFETY DATA SHEET

BIOSTAR 03 T

Toilet bowl cleaner

MANUFACTURER:

German metal surface treatment (SUGEST)

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1. Product and Company Identification

NAME Biostar 03T
USE Disinfectant Power Toilet Bowl Cleaner
LABEL Biostar 03T
Company German metal surface treatment chemicals co.

2. Product Description

Biostar 03T is the Ideal liquid for toilet bowls Cleans, and Stain remover for sinks, drains, and toilets, sick – room, urinals, bathroom floor, showers and swimming pool.

3. Hazards Identification

Emergency Overview

DANGER! STRONG Acid. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. CORROSIVE. CAUSES BURNS TO SKIN, EYES, AND RESPIRATORY TRACT. HARMFUL IF SWALLOWED OR INHALED.

HMIS RATING:

Health Rating: 3 - Severe (Life)
 Flammability Rating: 0 - None
 Reactivity Rating: 1 - Severe (Oxidizer)
 Contact Rating: 4 - Extreme (Corrosive)





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Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES
 Storage Color Code: White (Corrosive)



Potential Health Effect

Inhalation:

Vapors are corrosive and irritating to the respiratory tract. Inhalation of mist may burn the mucous membrane of the nose and throat. In severe cases, exposures may result in pulmonary edema and death.

Ingestion:

Corrosive and irritating to the mouth, throat, and abdomen. Large doses may cause symptoms of abdominal pain, vomiting, and diarrhea as well as blistering or tissue destruction. Stomach distention (due to rapid liberation of oxygen), and risk of stomach perforation, convulsions, pulmonary edema, coma, possible cerebral edema (fluid on the brain), and death are possible.

Skin Contact:

Corrosive. Symptoms of redness, pain, and severe burn can occur.

Eye Contact:

Vapors are very corrosive and irritating to the eyes. Symptoms include pain, redness and blurred vision. Splashes can cause permanent tissue destruction.

Chronic Exposure:

No information found.

Aggravation of Pre-existing Conditions:

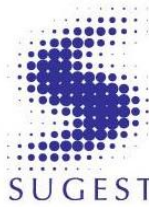
Persons with pre-existing skin disorders or eye problems or impaired respiratory function may be more susceptible to the effects of the substance.

4. Chemical Composition

Ingredient	CAS No	Percent
Hydrochloric acid	7647-01-0	1 - 10
Formic acid	64-18-6	1 - 5
Benzalkonium chloride	8001-54-5	0.1 - 1
Water	7732 - 18 - 5	To 100

5. Physical and Chemical Properties

Test	Specification
Description	Clear perfumed green Viscose liquid
pH (1%) is at 25 °C	1.1 - 1.7
Density at 20 °C g/cm ³	1.05 to 1.15



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6. First Aid Measures

Inhalation:

Remove person to fresh air. If breathing is difficult, give oxygen and get medical attention.

Skin contact:

If irritation is experienced, flush with water. If irritation persists, get medical attention.

Eye contact:

In case of contact with the eyes, remove contact lenses if easy to do, rinse immediately with plenty of water for 15 minutes, and seek immediate medical attention.

Ingestion:

Seek medical advice. DO NOT induce vomiting unless directed to do so by medical personnel. Give 2 to 4 glasses of water. Never give anything by mouth to a victim who is unconscious or is having convulsions.

Note to Physician:

Pulmonary edema may be delayed for 24 to 72 hours; keep under observation. Gastric lavage may be necessary if swallowed. Analysis of body fluids (particularly gastric aspirates) using the titanium chloride reaction, if done immediately, will reveal peroxides.

7. Fire Fighting Measures

Fire: Not combustible, but substance is a strong oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition. Increases the flammability of combustible, organic and readily oxidizable materials.

Explosion: Contact with oxidizable substances may cause extremely violent combustion. Drying of concentrated hydrogen peroxide on clothing or other combustible materials may cause fire or explosion. Sealed containers may rupture when heated.

Fire Extinguishing Media: Water spray may be used to extinguish surrounding fire and cool exposed containers. Water spray will also reduce fume and irritant gases. Slightly explosive in presence of open flames and sparks, of heat, of organic materials, of metals, of acids.

Hazardous combustion products: Potential oxides of carbon, nitrogen and sulfur when burned in a fire

Special information:

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode.

8. Accidental Release Measures

CAUTION! Caustic material. Causes fires with organic material. Ventilate area of leak or spill.

Use personal protection recommended in Section 10 , isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Evacuate area. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only non-sparking tools.

Environmental precautions:

Avoid release to the environment.

- Limited quantity
- Flush into sewer with plenty of water.



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- Large quantities:
- If the product contaminates rivers and lakes or drains inform respective authorities.

Clean-up methods:

Small Spill:

Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.

Large Spill:

Corrosive liquid. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Avoid contact with a combustible material (wood, paper, oil, clothing...). Keep substance damp using water spray. Do not touch spilled material. Use water spray curtain to divert vapor drift. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Dilute with a large amount of water and hold in a pond or dried area until the peroxide decomposes followed by discharge into a suitable treatment system. Do not flush undiluted material to sewer. This oxidizing material can increase the flammability of adjacent combustible materials. Empty containers should be rinsed with water before discarding.

9. Handling and Storage

Handling:

Keep locked up. Keep container dry. Keep away from heat. Keep away from sources of ignition. Keep away from combustible material.. Do not ingest. Do not breathe gas/fumes/ vapor/spray. Never add water to this product. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, reducing agents, combustible materials, organic materials, metals, acids, alkalis.

Storage:

Store in a cool(< 35 °C), well-ventilated dark area separated from combustible substances, reducing agents, strong bases, organics. Do not store on wooden shelves or floors. Suggest rotation of stock. Containers must be vented, but check periodically for bulging containers which can burst from pressure. Protect containers from physical damage, contamination, heat and incompatibles. Contamination from any source (dust, metals) may cause rapid decomposition with generation of large quantities of oxygen gas and high pressures. Rinse empty containers thoroughly with clean water. Glass, polyethylene, stainless steel and aluminum are recommended materials for storage containers. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

Store away from acids, store away from reach of small children.

Keep product dry to maintain free-flowing granules.

Keep away from food and drink.

Maximum Storage Period: 24 Months under standard storage conditions.

Container Type Packaging must comply with requirements of Hazardous Substances (Packaging) Regulations 2001.

For information on product shelf life, please review labels on container.

10. Exposure Controls/Personal Protection

Exposure Limits:

Hydrochloric acid

CEIL: 5 (ppm) from OSHA (PEL) [United States] CEIL: 7 (mg/m³) from OSHA (PEL) [United States] CEIL: 5 from NIOSH CEIL: 7 (mg/m³) from NIOSH TWA: 1 STEL: 5 (ppm) [United Kingdom (UK)] TWA: 2 STEL: 8 (mg/m³) [United Kingdom (UK)] Consult local authorities for acceptable exposure limits TWA: 1.4 (mg/m³) from NIOSH TWA: 1.4 (mg/m³) from OSHA (PEL) [United States] TWA: 1 (ppm) [United Kingdom (UK)] TWA: 1.4 (mg/m³) [United Kingdom (UK)] Consult local authorities for acceptable exposure limits.

Trihydroxylphosphine oxide



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ACGIH TLV (United States, 6/2013).

TWA: 1 mg/m³ 8 hours.

STEL: 3 mg/m³ 15 minutes.

OSHA PEL 1989 (United States, 3/1989).

TWA: 1 mg/m³ 8 hours.

STEL: 3 mg/m³ 15 minutes.

NIOSH REL (United States, 4/2013).

TWA: 1 mg/m³ 10 hours.

STEL: 3 mg/m³ 15 minutes.

OSHA PEL (United States, 2/2013).

TWA: 1 mg/m³ 8 hours.

Oxocarbinic acid

[TWA]: 5ppm, 9.4mg/m³

[STEL]: 10ppm, 19mg/m³

Engineering controls: Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved):

If the exposure limit is exceeded, wear a supplied air, full-facepiece respirator, airlined hood, or full-facepiece self-contained breathing apparatus. This substance has unknown warning properties.

Skin Protection:

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. CHEMICAL RESISTANT GLOVES: RUBBER OR NEOPRENE. LONG TYPE IF NEEDED.

Eye Protection:

Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.



11. Stability and Reactivity

- **Stability:** Stable under normal use conditions, but slowly decomposes to release oxygen. Unstable with heat, may result in dangerous pressures. A strong oxidizer, reacts violently upon contact with many organic substances, particularly textile and paper. Avoid light and keep in a closed but vented container to prevent evaporation (concentration) and contamination.
- **Conditions to Avoid:** Avoid heat, sparks, open flames and other ignition sources. Avoid dust generation.
- **Incompatible Materials:** Do not mix with strong acids, oxidizable materials, organic materials, dirt, alkalis, rust, metals, metallic salts, acids, alkalis and reducing agents.
- **Hazardous Decomposition Products:** Steam, oxygen and oxides of carbon, nitrogen and sulfur.
- **Possibility of Hazardous Reactions:** Contains sodium percarbonate, an oxidizer.
- **Hazardous Reactions** Polymerization is not expected to occur.

12. Toxicological information

Routes of Entry: Absorbed through skin. Eye contact.

Toxicity to Animals:



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Toxicity to Animals:

Acute oral toxicity (LD50): 900 mg/kg [Rabbit]. Acute toxicity of the vapor (LC50): 1108 ppm, 1 hours [Mouse]. Acute toxicity of the vapor (LC50): 3124 ppm, 1 hours [Rat].

Chronic Effects on Humans:

CARCINOGENIC EFFECTS: Classified A3 (Proven for animal.) by ACGIH [[**Hydrochloric acid**].

MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. [Hydrogen Peroxide]. Mutagenic for bacteria and/or yeast. [Hydrogen Peroxide].

Contains material which may cause damage to the following organs: blood, upper respiratory tract, skin, eyes, central nervous system (CNS).

Other Toxic Effects on Humans:

Very hazardous in case of skin contact (irritant).

Hazardous in case of skin contact (corrosive), of eye contact (corrosive), of ingestion, of inhalation (lung corrosive).

Phosphoric acid LD50 Oral Rat 1.25 g/kg

Formic Acid

Oral LD50 (rat): 3000 mg/kg.

Oral LD50 (mice): 5040 mg/kg SKIN: Mild irritant (rabbit).

EYES: Severe irritant (rabbit).

Acute toxicity

LD50 Oral - Rat - 5,400 mg/kg

(OECD Test Guideline 401)

LD50 Dermal - Rat - > 2,000 mg/kg

(OECD Test Guideline 402)

Skin corrosion/irritation

Skin - Rabbit

Result: Mild skin irritation

(OECD Test Guideline 404)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: Irritating to eyes.

(OECD Test Guideline 405)

Respiratory or skin sensitization

Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals.

Toxicological Data on Ingredients: Benzalkonium chloride: ORAL (LD50): Acute: 240 mg/kg [Rat].

Ecotoxicity

While not tested as a whole, based on the Ecotoxicity and biodegradability of the individual components in the powdered bleach, it is expected that this product will exhibit a non-hazardous order of toxicity at relevant environmental concentrations.

Ecotoxicity effects

Aquatic Ecotoxicity

Phosphoric acid

Daphnia - Daphnia magna, Acute EC50 105 ppm Fresh water 48 hours

Fish - Lepomis macrochirus, Acute LC50 60 ppm Fresh water 96 hours

Formic Acid

Toxicity Effects: Highly Toxic for fish, not considered to be toxic for bacteria.

Air Pollution: 50mg/m³ for a mass emission >0.5Kg/h

Toxicity to fish mortality LC50 - Leuciscus idus melanotus - 440 mg/l - 48 h (OECD Test Guideline 203)

Toxicity to daphnia and other aquatic invertebrates: static test - Daphnia magna (Water flea) - 1,535 mg/l - 24 h



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13. Disposal Considerations

Waste Disposal:

Waste must be disposed of in accordance with federal, state and local environmental control regulations. Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dilute with water and flush to sewer if local ordinances allow, otherwise, whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport information

Shipping Name: Biostar 03 T

Domestic (Land, D.O.T.)

Proper Shipping Name: Acid toilet bowl cleaner

Hazard Class: 8

UN/NA: UN1789

Packing Group: III

15. Other Information

Federal and State Regulations:

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

WHMIS (Canada):

CLASS D-2A: Material causing other toxic effects (VERY TOXIC). CLASS E: Corrosive liquid.

DSCL (EEC):

R34- Causes burns. R37- Irritating to respiratory system. S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

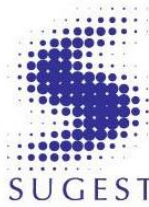
Health: 3 **Flammability:** 0 **Reactivity:**

Protective Equipment:

Gloves. Full suit. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Face shield.

Label Hazard Warning:

DANGER! CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. CORROSIVE. CAUSES BURNS TO SKIN, EYES, AND RESPIRATORY TRACT. HARMFUL IF SWALLOWED OR INHALED.



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Label Precautions:

Keep from contact with clothing and other combustible materials.

Do not store near combustible materials.

Do not get in eyes, on skin, or on clothing.

Do not breathe vapor or mist.

Store in a tightly closed container.

Use only with adequate ventilation.

Remove and wash contaminated clothing promptly.

Wash thoroughly after handling.

Avoid contamination from any source, metals, dust, and organic materials that may cause rapid decomposition, generation of large quantities of oxygen gas and high pressure. Drying of product on clothing or combustible materials may cause fire.

16. Packing

Packaging type: HDPE containers, inner cap and sealed cap.

DISCLAIMER: *The data contained herein are furnished for information only and are believed to be reliable. However, SUGEST and its affiliates ("SUGEST") does not assume responsibility for any results obtained by persons over whose methods SUGEST has no control. It is the user's responsibility to determine the suitability of SUGEST's products or any production methods mentioned herein for a particular purpose, and to adopt such precautions as may be advisable for the protection of property and persons against any hazards that may be involved in the handling and use of any SUGEST's products. In light of the foregoing, SUGEST specifically disclaims all warranties, express or implied, including warranties of merchantability and fitness for a particular purpose, arising from sale or use of SUGEST's products. SUGEST further disclaims any liability for consequential or incidental damages of any kind, including lost profits.*