Confident efficacy. Full sterility.

BD’s extensive line of sterile patient preoperative skin preparation products raises the standard.
Significant challenges, important choices

Healthcare-associated infections (HAIs) are a major concern for hospitals everywhere

The human and economic toll of HAIs

In the United States, 687,000 HAIs in a single year

As many as ~75,000 deaths annually

Nearly $10 billion in annual costs

HAI risks have led healthcare professionals to take a close look at preoperative skin preparation

Alcohol-based preoperative skin antiseptics are recommended in the latest evidence-based infection guidelines published by preeminent health organizations:

- **World Health Organization (WHO):** The panel recommends alcohol-based antiseptic solutions based on chlorhexidine gluconate (CHG) for surgical skin site preparation. (2016)⁴

- **American College of Surgeons/Surgical Infection Society (ACS/SIS):** Alcohol-containing preoperative skin preparatory agents unless contraindication exists. (2016)⁵

- **Centers For Disease Control and Prevention (CDC):** Perform intraoperative skin preparation with an alcohol-based antiseptic agent unless contraindicated. (2017)⁶

HAI risks due to intrinsic antiseptic contamination led the FDA to take action

- Non-sterile preoperative skin antiseptics run the risk of intrinsic contamination during manufacturing⁷

- Infectious outbreaks from intrinsic contamination have resulted in morbidity and mortality⁸

- Because of this risk, the Food and Drug Administration (FDA) requested that preoperative skin antiseptics be labeled as sterile or non-sterile to allow for informed decisions⁷

“In past years, outbreaks associated with the use of contaminated topical antiseptics have led to some product recalls...”⁷

FDA Drug Safety Communication
BD has the solutions

High-quality products backed by highly qualified professionals

A portfolio of alcohol-containing, sterile antiseptic products

Chlorhexidine gluconate/Isopropyl alcohol
BD ChloraPrep™ Patient Preoperative Skin Preparation with Sterile Solution

Elevating the standard in skin antiseptic sterility.

An effective alternative when a chlorhexidine gluconate plus alcohol is not ideal
BD PurPrep™ Patient Preoperative Skin Preparation with Sterile Solution


A dedicated team of skin preparation experts
Ready to assist you in building the optimal preoperative skin preparation portfolio
Advancing patient safety through product sterility

BD has achieved a breakthrough in antiseptic sterilization

Sterilizing antiseptic solutions is a difficult challenge
- Some manufacturers have asserted that it is “impossible or impractical”
- Conventional terminal sterilization processes such as high heat and radiation are not compatible with some common antiseptics, including CHG
- Can compromise the chemical integrity of the active ingredient

BD overcame the “impossible”
- Putting patient safety first, BD committed significant time and resources to develop patented sterilization technology

The lowest risk of intrinsic contamination available in the United States
- BD’s sterilization technology delivers 1,000 times the required minimum sterility assurance

Maintains the efficacy and purity of the antiseptic solution

Less than 1-in-a-million chance that a viable microorganism can exist in a BD ChloraPrep™ product

Sterility assurance level of $10^{-6}$—the same level required for injectable products

The commitment behind the achievement

6 years
>50,000 R&D hours
3 patents
7 teams
A winning combination for complete sterility

BD’s sterile antiseptics come in proprietary sterile applicators that help prevent extrinsic contamination.

Designed to improve antiseptic application
Eliminates variability to help make life easier for clinicians and ensure a consistent, appropriate technique for patients

Single step
As easy as “Pinch. Apply. Let Dry.”

Single handed
Does not require burdensome two-handed technique

Single use
Helps reduce risk of cross-contamination with no ability to manipulate the solution.

- All-in-one, single-use applicator promotes a thorough, aseptic, “no touch” technique
- Proprietary wing design makes activation quick and easy
- Proprietary tinting process provides enhanced visualization for added assurance
- Foam sponge helps control solution flow and enables a gentle scrubbing motion for thorough coverage.
BD ChloraPrep™ Patient Preoperative Skin Preparation with Sterile Solution

Elevating the standard in sterile preoperative skin antisepsis

The only 2% CHG/70% IPA, fully sterile surgical skin antiseptic in the U.S. with demonstrated persistence of at least 7 days."

- A dual formulation of 2% CHG and 70% isopropyl alcohol (IPA)
- Comes ready to use in a proprietary sterile applicator for even greater peace of mind
- Broad-spectrum, rapid-acting patient preoperative skin preparation with persistent antimicrobial activity for at least 7 days 14,16

Meets FDA requirements for antimicrobial activity 15,17

In the abdomen
- Achieves a 2-log reduction in microbial flora per square centimeter 16

In the groin
- Achieves a 3-log reduction in microbial flora per square centimeter 16

Reductions within 10 minutes 16

Persistent for at least 7 days 14,16

Backed by more than 60 studies
- Studied more than any other skin antiseptic brand*
- Offers unsurpassed evidence of consistently dependable efficacy and safety*

* Data on file.

Trusted by hospitals for more than 21 years
- Supported by evidence-based guidelines published by the WHO, CDC, and ACS/SIS
- More than 5 billion applicators used to date
Superior antimicrobial performance vs. iodine- and alcohol-based products**

2x
more effective for eliminating bacteria than DuraPrep™

4x
more effective for eliminating bacteria than iodine scrub and paint*

Significantly lower positive culture rates vs. PVP-I and DuraPrep™
Results from two prospective, randomized studies (level 1 evidence)

Data from Saltzman et al.19
(P<0.0001 vs. PVP-I; P=0.01 vs. DuraPrep™)

<table>
<thead>
<tr>
<th>Location</th>
<th>BD ChloraPrep™</th>
<th>DuraPrep™</th>
<th>PVP-I scrub and paint</th>
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<tr>
<td>Shoulder</td>
<td>7%</td>
<td>19%</td>
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<td>Toe</td>
<td>23%</td>
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<tr>
<td>Hallux</td>
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Data from Ostrander et al.18

<table>
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<tr>
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<td>30%</td>
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</tbody>
</table>

“The potential properties that make chlorhexidine highly effective are a strong affinity for binding to the skin, high antibacterial activity, and prolonged residual effects.”19

BD ChloraPrep™ Patient Preoperative Skin Preparation with Sterile Solution

Unparalleled flexibility for your wide range of patients and procedures

**Lets you tailor your choice to the surface area, type of site, and skin color**
Allows for standardized skin preparation and associated cost savings

**Can be used with or without a drape**
When allowed to fully dry per the IFU, BD ChloraPrep™ provides effective drape utilization

**Available in all surgical packs and through all distribution partners**
Providing exceptional convenience to accommodate your varying surgical needs

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**Hi-Lite Orange™**
For lighter pigmented skin

**Scrub Teal™**
For darker pigmented skin

**Clear**
When you want a colorless effect
Make your own comparisons

See how your preoperative skin antiseptic stacks up

<table>
<thead>
<tr>
<th>Attribute</th>
<th>IPA</th>
<th>Iodophors (iodine-based)</th>
<th>CHG</th>
<th>Iodine + IPA</th>
<th>CHG + IPA</th>
<th>BD Chloraprep™ with Sterile Solution</th>
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<tbody>
<tr>
<td>Broad spectrum</td>
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Ordering information

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<th>Applicator</th>
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<td>930700</td>
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<td>10.5 mL Hi-Lite Orange™</td>
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<tr>
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<tr>
<td>26 mL Hi-Lite Orange™</td>
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<td>25 app/case</td>
</tr>
<tr>
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<td>930825</td>
<td>25 app/case</td>
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BD PurPrep™ Patient Preoperative Skin Preparation with Sterile Solution

A sterile, simple, and effective alternative when a CHG + alcohol solution is not ideal

The first and only fully sterile iodine-based skin prep applicator available in the United States
- A dual formulation of PVP-I (0.83% available iodine) and 72.5% IPA
- In clinical studies, PVP-I has demonstrated broad spectrum antimicrobial properties
- Comes ready to use in a proprietary sterile applicator for even greater peace of mind
- An option when CHG is contraindicated or for patients with CHG allergies/sensitivities

Aligns with current preoperative skin prep guidelines from leading U.S. health organizations
- CDC and ACS/SIS recommendations support use of alcohol-based antiseptic formulations unless contraindicated

Designed to improve antiseptic application over standard scrub and paint methods
- Dual formulations are more effective at killing bacteria
- Single-use applicator can shorten application times

Features a fluid-resistant, film-forming polymer that facilitates drape adhesion and easy removal
- Helps create a durable antimicrobial barrier
- Helps iodine bind to the skin for residual antimicrobial activity
- Facilitates drape adherence while permitting gentle drape removal
- Requires no separate remover—potentially reducing extra time and cost

Ordering information

<table>
<thead>
<tr>
<th>Applicator</th>
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<th>Quantity</th>
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</thead>
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<td></td>
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<tr>
<td>26 mL BD PurPrep™</td>
<td>960120</td>
<td>25 app/carton</td>
</tr>
</tbody>
</table>
BD: Your partner in preoperative skin prep

Personalized assistance and plentiful resources

A dedicated team of skin preparation experts who care about your success

- These highly trained specialists know our products inside and out, as well as the current guidelines for preoperative skin prep
- They are available expressly for you to answer any product questions you may have
- They can help to ensure the right BD product is being used at the right time

A partnership that includes ongoing training and support

- In-service training and educational materials
- Can help to improve the standard of care for preoperative skin antisepsis in your operating room by working directly with your team to:
  - Identify and address practice gaps and process variability
  - Standardize aseptic technique
  - Supports recommendations of current clinical standards and guidelines
  - Enhance clinician knowledge to help improve patient care

Our robust online resources are available for you 24 hours a day, 7 days a week, 365 days a year

www.bd.com/chloraprep

- To find out about more preoperative skin preparation tools
- To see the in-service video
- To contact sales and support
- To view product labels
Learn more about BD skin preparation products at go.bd.com/ChloraPrep-PurPrep-persistence or call 1-844-8 BD LIFE (844-823-5433).

References