



Safety. Performance.
Ergonomics. Ease of use.
We've advanced them all.

Introducing the BD PhaSeal™ Optima system:
the next generation of hazardous drug protection



We began with the most widely published CSTD in the world

The BD PhaSeal™ system pioneered the category of closed-system drug transfer devices (CSTDs) to help protect the healthcare workers who prepare and administer hazardous drugs. For over 20 years, facilities have used BD PhaSeal to protect their personnel from hazardous drug exposure and to reduce drug waste.

1ST
CSTD
IN THE WORLD
to be clinically used¹

SUPPORTED BY
25+ 
independent
published studies



And asked users how we could make it even better

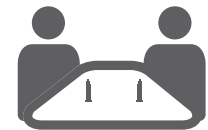
We turned to healthcare professionals like you—the nurses, pharmacists and technicians who handle hazardous drugs every day. The feedback and validation we received from longstanding CSTD users and traditional technique users guided us to optimize every component.



ONE-ON-ONE
FEEDBACK



FOCUS GROUPS



HEAD-TO-HEAD
COMPARISONS

The result is the BD PhaSeal Optima system

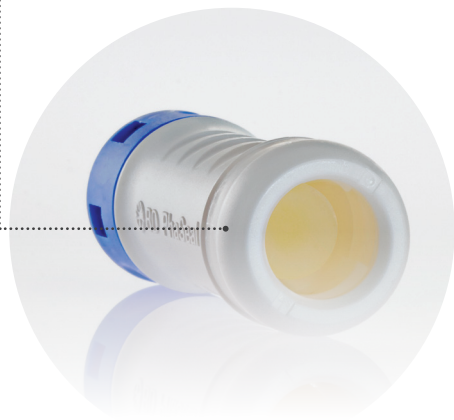
Unlike other safety devices, the BD PhaSeal Optima system is designed with no inlets or air exchange for airtight drug transfers. It also incorporates the double membranes and vapor capture mechanisms pioneered by the BD PhaSeal system, which has been demonstrated to reduce the risk of hazardous drug exposure.



With design innovations that advance hazardous drug safety

Safety

- **Injector** designed to prevent needle exposure and accidental needlesticks
- **Self-sealing membranes on all components** for leakproof connections



Performance

- **Proprietary protector design** to maximize drug extraction for each vial
- **Prevents microbial ingress** for up to 168 hours and 10 penetrations^{††}
- **Compatible** with ISO-compliant luer lock syringes and IV sets



Ergonomics

- **Design of components optimized** for clinician comfort
- **Power grip and straight motion to connect** that align with NIOSH recommendations to avoid pinch grip²



Ease of use

- **Intuitive one-step straight-push connection** to aid workflow integration
- **No alignment or orientation needed** to connect, minimizing learning curve



With the BD PhaSeal Optima system, you can be confident that you're protecting your healthcare workers with a next-generation, user-tested CSTD solution. And from ongoing training and education to partnering to improve your safe handling practices, BD will support your every effort to advance hazardous drug safety.

Let's get started.

To demo the new BD PhaSeal Optima system
or to place an order, **contact your BD representative**

To view our integrated solutions for
hazardous drug safety, **visit [bd.com](https://www.bd.com)**

*Within an ISO Class V environment following aseptic technique.

[†] The ability to prevent microbial ingress for up to 168 hours should not be interpreted as modifying, extending or superseding a manufacturer labeling recommendations for the storage and expiration dating of the drug vial. Refer to drug manufacturer's recommendations and USP compounding guidelines for shelf life and sterility information.

References:

1 Massoomi F. The evolution of the CSTD. *Pharm Purchasing Prod.* 2015;12(2):1.

2 *Easy Ergonomics: A Guide to Selecting Non-Powered Hand Tools*. Accessed on October 25, 2017, at <https://www.cdc.gov/niosh/docs/2004-164/pdfs/2004-164.pdf>

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