

TechBriefs

Savannah River National Laboratory

U.S. DEPARTMENT OF ENERGY • SAVANNAH RIVER SITE • AIKEN • SC

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At a glance

- > Portable
- > No modifications required
- > Converts from breech lock to bag out port
- > Inner door offset for ease of container handling
- > U.S. Patent 9,194,175 B2

Contact Information

Partnering Opportunities

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Portable Breech Lock for Gloveboxes

An engineer at the Savannah River National Laboratory (SRNL) has developed a portable breech lock to improve sample management at the Savannah River Site.

Background

Glove boxes are commonly used for the manipulation of hazardous or potentially hazardous substances within a controlled environment. Typically the glove box will include glass walls or windows through which an operator can view the interior from a safe position exterior to the glove box. One or more pairs of glove ports or gloved openings are provided with gloves attached. These gloves are connected to the wall in a manner that maintains a seal. Operators can insert their hands and arms through the gloved openings to manipulate items within the glovebox. Challenges exist with effectively utilizing a glove box while transferring an item into the glovebox for use within. Additionally, the shape, weight, or other aspects of the item may interfere with its positioning, allowing the item to be dropped which could be dangerous and/or damaging for some items.



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Technology transfer

The Savannah River National Laboratory (SRNL) is the U.S. Department of Energy's (DOE) applied research and development laboratory at the Savannah River Site (SRS).

With its wide spectrum and expertise in areas such as homeland security, hydrogen technology, materials, sensors, and environmental science, SRNL's cutting edge technology delivers high dividends to its customers.

The management and operating contractor for SRS and SRNL is Savannah River Nuclear Solutions, LLC. SRNS is responsible for transferring its technologies to the private sector so that these technologies may have the collateral benefit of enhancing U.S. economic competitiveness.

How it works

A breech lock for a glovebox may be used to transfer one or more items into a glovebox. It consists of a sealed cylinder with a door on each end and fits inside the existing glovebox port. The inside door has an offset door for ease of removing items inside the glovebox by a gloved operator.

A vacuum is maintained inside the glovebox so that opening the door does not introduce contaminants into the chamber or the outside environment. Latch mechanisms may be used to secure the doors. The breech lock can be used interchangeably, installed in place of a plug, a glove, or other device in a port opening and can be reused.



Partnering opportunities

SRNS invites interested companies with proven capabilities in this area of expertise to develop commercial applications for this process under a cooperative research and development agreement (CRADA) or licensing agreement. Interested companies will be requested to submit a business plan setting forth company qualifications, strategies, activities, and milestones for commercializing this invention. Qualifications should include past experience at bringing similar products to market, reasonable schedule for product launch, sufficient manufacturing capacity, established distribution networks, and evidence of sufficient financial resources for product development and launch.

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