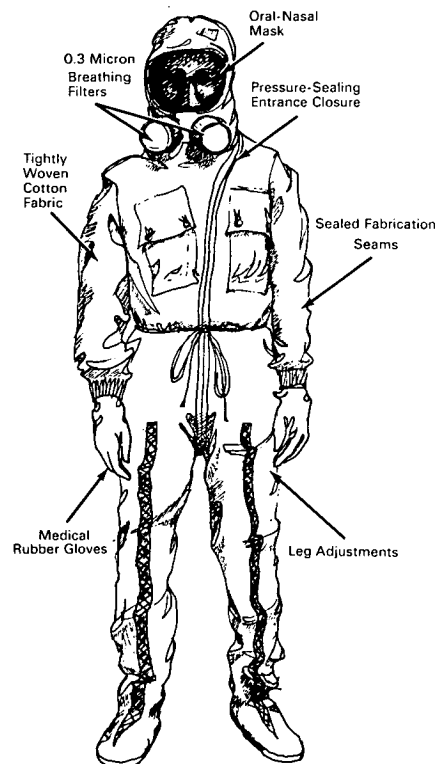


NASA TECH BRIEF



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Biological Isolation Garment



The biological isolation garment (BIG) is being developed to prevent possible contamination of the earth's atmosphere with extraterrestrial life forms which may be carried by astronauts returning from the moon. This garment is designed to ensure containment of 98 percent of viable particles 0.45 micron or larger in diameter and to maintain a habitable environment without the use of an external ventilation system to supply thermally balanced body cooling. Garments which have previously been proposed for

biological isolation of returning astronauts were fabricated from nonporous materials, porous (filter) papers, or heavy porous fiber materials. Nonporous garments require an external ventilation system; filter papers have very poor strength and wear properties; and heavy porous fiber materials are generally difficult to fabricate into a garment and require external ventilation systems.

The BIG is a one-piece loose fitting garment fabricated from a special tightly woven, permeable, 100

(continued overleaf)

percent-cotton fabric. Its headpiece, containing a full width visor, incorporates an integral oronasal respirator with 0.3-micron-particle filters, which filter the wearer's inspired and expired breath. All fabrication seams are sealed on the inside of the garment to ensure the required biological containment. The garment is provided with a zippered pressure-sealing closure extending diagonally from the crotch across the left side of the chest and curving over the left ear to the top of the head. The BIG is also provided with medical rubber gloves and sizing adjustments on the legs and torso. A one-piece suit of cotton underwear is worn under the garment. This garment is easy to don and remove, allows complete freedom of movement, and requires no external support equipment.

Notes:

1. The garment performs equally well in preventing particles from penetrating into the wearer, and therefore will afford protection in contagious areas.
2. The garment may be of interest to medical researchers, air pollution technologists, and clean-room operators.
3. Documentation is available from:
Clearinghouse for Federal Scientific
and Technical Information
Springfield, Virginia 22151
Price \$3.00
Reference: B68-10500

Patent status:

Inquiries about obtaining rights for the commercial use of this invention may be made to NASA, Code GP, Washington, D.C. 20546.

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