

NUHOMS® MP197HB Transport Cask

The NUHOMS® MP197HB transportation cask is truly versatile, being the only universal cask capable of transporting nine different types of used fuel canisters. All transportable canister types designed by AREVA TN can be transported in the MP197HB.

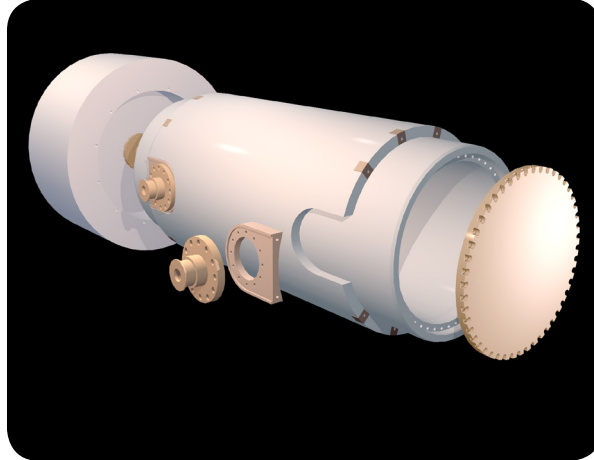
The NUHOMS® MP197HB is used for the offsite transportation of up to 61 or 69 intact or damaged BWR fuel assemblies depending upon the canister type used as a payload. Similarly, it can transport up to 24, 32 or 37 intact or damaged PWR fuel assemblies depending upon the canister type used as a payload. The NUHOMS® MP197HB cask is also capable of transporting the NUHOMS Radwaste Canister (RWC) that is used to store dry irradiated and/or contaminated non-fuel hardware.

The MP197HB is a transport cask consisting of a containment boundary, structural shell, gamma shielding material, and solid neutron shield. The containment boundary consists of a cylindrical shell, bottom end (closure) plate with a RAM access penetration, top end forging ring, bottom and top cover plates (lids) with associated seals and bolts, and vent and drain port closure bolts and seals.

Sets of removable upper and lower trunnions, bolted to the outer shell of the cask provide support, lifting, and rotation capability between horizontal and vertical orientations. Impact limiters consisting of balsa and redwood, encased in stainless steel shells, are attached to each end of the NUHOMS® MP197HB cask during shipment. A thermal shield is provided between the impact limiter and the cask to minimize heat transfer to impact limiters. Each impact limiter is held in place by twelve (12) attachment bolts. A personnel barrier is mounted to the transport frame to prevent unauthorized access to the cask body.

The NUHOMS® MP197HB packaging is transported in the horizontal orientation, on a specially-designed shipping frame. The package is approved for exclusive use by rail, truck or marine transport. The package during transport is secured to the transportation skid with a cask shear key and by saddles and tie-down straps.

The used fuel payload is shipped dry in a helium atmosphere. Both the transport cask cavity and the Dry Shielded Canister (DSC) cavity are filled with helium. The heat generated by the used fuel assemblies is dissipated to the surrounding air by conduction, convection and radiation. The cask is designed to carry payloads with a maximum of 32kW heat load. External fins are only required for heat loads greater than 26kW.



About AREVA TN

AREVA TN, a division of AREVA Inc., is a leader in the American nuclear market offering innovative total systems solutions for used fuel and radioactive waste management and transportation. More than 50 percent of American nuclear plant operators use AREVA TN's used fuel storage or transport solutions, irradiated waste removal and processing, and pool to pad services.

As part of AREVA, the global leader in nuclear technology, AREVA TN offers the industry an unparalleled level of engineering, technical and logistics expertise.

AREVA TN's track record of providing safe storage and transportation of used fuel is driven by state-of-the-art products and services, innovative engineering solutions, and integrity in meeting customer expectations for low-dose and error-free campaigns. AREVA TN customers include utilities, reactor operators, research reactors and the U.S. government.

AREVA TN's products are marked by the highest standard of safety, uncompromising commitment to quality and operational dependability, and "as promised" service integrity.

Technical Features

Payload:

Up to 61 or 69 BWR Fuel Assemblies
Up to 24, 32 or 37 PWR Fuel Assemblies depending upon canister type
Intact or Damaged BWR Fuel with or w/o channels
Intact or Damaged PWR Fuel with or w/o control components
Fuel Design: 7x7, 8x8, 9x9, or 10x10 BWR Fuel Assembly or 14x14, 15x15, 16x16, or 17x17 PWR Fuel Assembly

Materials of Construction:

Stainless Steel Shell and Cover Plates
Gamma Shielding is Stainless Steel and Lead
Neutron Shielding is Aluminum-Encased Resin
Impact Limiters are Balsa & Redwood, Encased in Stainless Steel Shells
Carbon Steel Closure Bolts
Option of Outer Fins for High Decay Heat Payload Depending Upon the Regulation

Physical Data:

Outside Diameter is 126 inches w/impact limiter
Outside Diameter is 97.75 inches w/o impact limiter
Outside Length is 271.25 inches w/impact limiters
Cask Body Diameter is 97.75 inches without fins and 104.25 inches with fins
Cavity Length is 199.25 inches
Cavity Diameter is 70.5 inches and 68 inches with internal sleeve
Weight, Empty is 94.7 tons w/impact limiters
Weight, Loaded is 152 tons w/impact limiters

Fuel Parameters:

Maximum Burnup up to 62,500 MWD/MTU
Minimum Cooling Time Depends Upon the Payload
Maximum Heat Load is 32 kW
Maximum Heat Load per Assembly Depends Upon the Payload

Design Parameters

Required Crane Capacity for direct loading out of the spent fuel pool – 141 Tons inside the fuel handling area with the heaviest payload. Capable of loading a dry shielded canister from a storage module.

Maximum Drop Height – Meets all the normal and accident condition design loads per 10CFR71 requirements.

AREVA TN Americas

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