

NUHOMS® MP197HB

Universal Transport Cask

➤ Licensed to transport canistered HBU used fuel

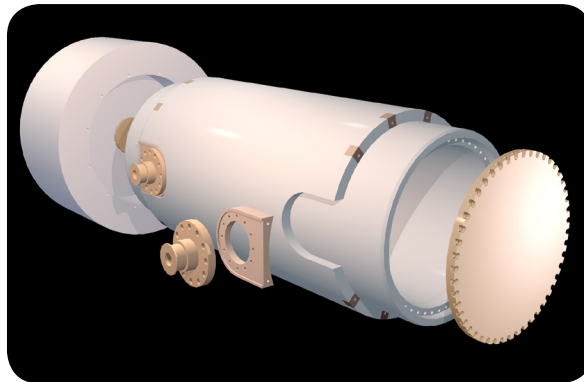
NUHOMS® MP197HB transportation cask is truly versatile – the universal cask capable of transporting nine different types of used fuel canisters. All transportable canister types designed by TN Americas can be transported in the MP197HB.

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 NUHOWS 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 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 transport by rail, truck, or marine transport. During transport, the package is secured to the transportation skid with a cask shear key saddles and tie-down straps.



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 TN Americas

TN Americas 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 TN's used fuel storage or transport solutions, irradiated waste removal and processing, and pool to pad services.

TN Americas' 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. TN Americas customers include utilities, reactor operators, research reactors and the U.S. government.

TN Americas' 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 limiters
- Outside length is 271.25 inches w/impact limiters
- Cask body diameter is 97.75 inches w/o 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.

TN Americas

Chris Miller

VP, Sales & Marketing

7135 Minstrel Way, Suite 300

Columbia, MD 21045 USA

Tel: 410.910.6924

Christopher.Miller@areva.com

NUHOMS® is a registered trademark of TN Americas LLC. The data and information contained herein are provided solely for illustration and informational purposes and create no legal obligations by TN Americas. None of the information or data is intended by TN Americas to be a representation or a warranty of any kind, expressed or implied, and TN Americas assumes no liability for the use of or reliance on any information or data disclosed in this document. ©2017 AREVA Nuclear Materials LLC. All rights reserved.