



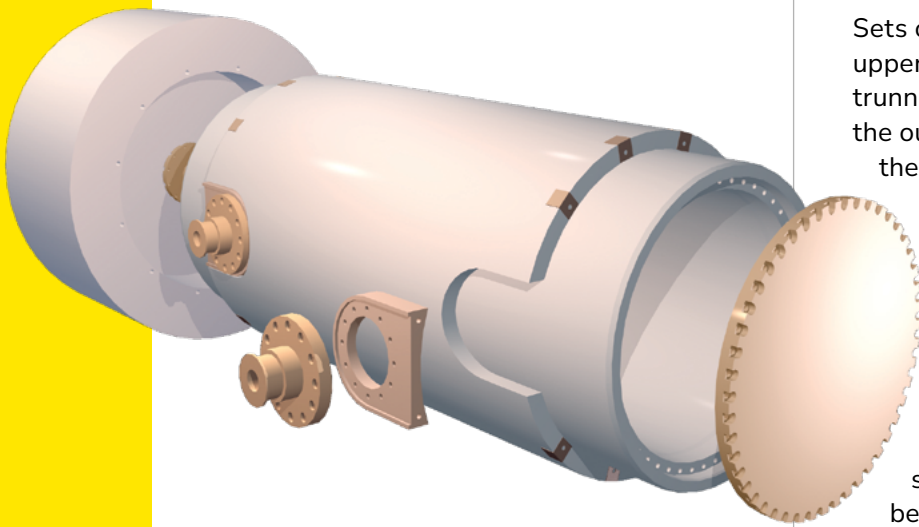
Orano TN

NUHOMS® MP197HB

Universal Transport Cask

Licensed to transport canistered high burnup (HBU) spent nuclear fuel

All transportable canister types designed by Orano TN can be transported in the MP197HB.



The NUHOMS MP197HB is used for the offsite transportation of up to 69 intact or damaged BWR fuel assemblies depending upon the canister type used as a payload. Similarly, it can transport up to 37 intact or damaged PWR fuel assemblies. The NUHOMS MP197HB cask is also capable of transporting the Radwaste Container (RWC) that is used to store or dispose of 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 is comprised 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. A personnel barrier is mounted to the transport frame to prevent unauthorized access to the cask body.

The NUHOMS MP197HB is transported horizontally on a specially-designed shipping frame. The package is approved for transport by rail, road, and water. During transport, the package is secured to the transportation skid with 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. With a maximum of 32kW heat load for shipment of used fuel, external fins are only required for heat loads greater than 26kW.

BENEFITS

- Versatile: Able to transport nine different types of used fuel canisters and various waste containers
- Usable for intact or damaged fuel
- Max. 32kW heat load
- Max. quantity of radioactive material: 70,000 Ci of Co-60 equivalent activity

IDEAL FOR...

...shipment of variety of canisters, damaged fuel, or irradiated hardware.

Technical Features

Payload:

- Highly irradiated reactor components
- Up to 69 BWR fuel assemblies
- Up to 37 PWR fuel assemblies depending upon canister type
- Intact or damaged BWR fuel
- Intact or damaged PWR fuel with or without control components

Fuel design:

BWR: 7x7, 8x8, 9x9, or 10x10

PWR: 14x14, 15x15, 16x16, or 17x17

Materials of Construction:

- **Shell and Cover plates:** stainless steel
- **Gamma shielding:** stainless steel and lead
- **Neutron shielding:** aluminum-encased resin
- **Impact limiters:** balsa & redwood encased in stainless steel shells
- **Closure bolts:** carbon steel
- **Option of outer fins** for high decay heat payload, depending upon the regulation



MP197HB cask preparing for rail shipment

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Physical Features

- **Outside diameter:** 126 inches w/ impact limiter
- **Outside diameter:** 97.75 inches w/o impact limiters
- **Outside length:** 271.25 inches w/ impact limiters
- **Cask body diameter:** 97.75 inches w/o fins and 104.25 inches w/fins
- **Cavity length:** 199.25 inches
- **Cavity diameter:** 70.5 inches and 68 inches w/internal sleeve
- **Weight, empty:** 94.7 tons w/impact limiters
- **Max. weight, loaded:** 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:** 32 kW
- **Maximum Ci content:** 70,000 Ci of Co-60 equivalent activity

Design Parameters

Maximum drop height: meets all the normal and accident condition design loads per 10CFR71 requirements.

Licensed under NRC CoC USA/9302/B(U)F-96

For more detailed information on Orano TN casks and transportation capabilities, scan the QR code or click here.

