

# OPTIMUS™ TRANSPORT PACKAGES

## HIGHLIGHTS

- Versatile, cost-efficient Type B(U)F packaging for ILW, TRU, LEU and FM materials
- Two package types (OPTIMUS-L & -H) for low- and high-activity contents
- Ships challenging waste, such as aerosol cans with compressed or liquified gas propellant
- Use of same Cask Containment Vessel (CCV) design in both OPTIMUS-L & -H versions allows interchangeability and standardization of operating procedures
- Easily reconfigured with shield inserts for contents requiring increased activity shielding
- Small, light packages ideal for facilities with restricted access and/or low crane capacity
- Pallets allow forklift handling to simplify loading and unloading operations

NAC International is transforming radioactive materials (RAM) transportation packaging with OPTIMUS; a new family of Type B(U)F transportation packages developed for transportation of challenging materials. OPTIMUS-L is used for low-activity contents, such as CH-TRU and low-activity ILW, whereas OPTIMUS-H is used for high-activity contents including RH-TRU, high-activity ILW, low-enriched uranium, and fissile material. OPTIMUS provides a transportation solution for challenging contents, such as overpacked containers (e.g., 110-gallon drums), with high heat loads or fissile gram equivalent (FGE) content, gas generating materials, and TRU waste including aerosol cans filled with compressed or liquified gas propellant. OPTIMUS transportation packages are designed to satisfy the regulatory requirements of both IAEA SSR-6 and 10CFR71.



**OPTIMUS** system is a  
**TRANSFORMATION**  
in the world of  
**NAC's RAM packaging**



OPTIMUS shipping casks are designed to support legal weight truck (LWT) shipments of a wide range of wastes and fissile material contents in multiple transport configurations.

## CONTACT:

Jeff England, Director, Transportation & Packaging Solutions  
Phone: +1 770-605-3250 | [jengland@nacintl.com](mailto:jengland@nacintl.com)

## PACKAGING COMPONENT DESCRIPTION

### CASK CONTAINMENT VESSEL (CCV)

- Stainless steel containment vessel
- Innovative bolted closure system to facilitate remote closure operations
- Universal and compatible lifting and anchoring attachments

### OUTER SHIELD VESSEL (OSV)

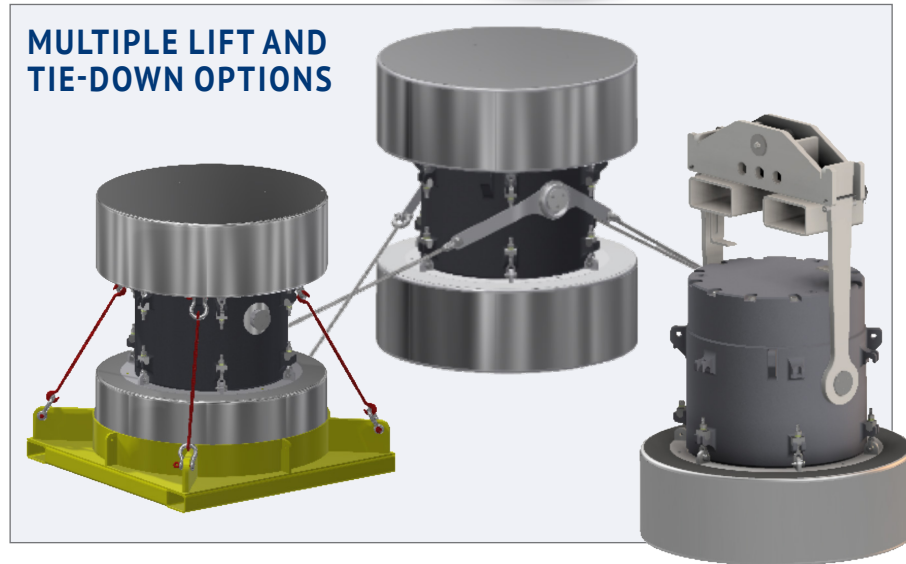
- Cost-effective shield vessel to protect CCV
- Simplified mechanical closure with weather seal
- Integral trunnions, tie downs and attachment lugs for efficient handling
- Integrated drain and monitoring port

### IMPACT LIMITER SYSTEM (ILS)

- Closed-cell polyurethane foam encased in stainless steel
- Swing-bolt connections for quick installation/removal

### SAFETY BY DESIGN FEATURES

- 10 CFR 71 and SSR-6 Type B(U)F
- Designed to ASME Code Section III-NB and NF criteria
- Pressurization analysis
- Contingency combustion analysis, considering possible deflagration and detonation
- Up to 390 FGE per drum for plutonium and uranium wastes



## OPTIMUS SPECIFICATIONS

Package Attribute	OPTIMUS-L	OPTIMUS-H
Package Designation	Type B(U)F-96	
Controls	Exclusive-Use	
Cavity Dimensions (in)	Ø32.5 x 47.0	
MNOP (psig)	100	
Outer Dimensions (in)	Ø49.0 x 70.0	Ø74.2 x 83.2
Contents Weight (lb)	≤3,150	≤7,300
Gross Weight (lb)	≤9,200	≤32,000
Decay Heat (watts)	≤100	≤200 - 1,500
FGE Limit (g <sup>239</sup> Pu)	≤395	≤390
FEM Limit (wt% <sup>235</sup> U)	0.8	0.9