



*smolsys ltd.*



2025

## „Plug & Produce“ Isotope Lab

Mobile laboratory for **tritium**, **hydrogen**,  
and other **regulated** substances.

Swiss-engineered. Field-tested. Ready to deploy.

# Plug & Produce Isotope Lab

## Compact, secure, and fully mobile

The Radio Medical Container (RMC) Lab is a highly safe, mobile solution for working with tritium gas, hydrogen, and other sensitive substances.

Its fire-resistant hull, integrated safety systems, and robust construction make it ideal for research, production, or temporary deployment.

Custom-built to your specifications but always ready to plug and produce. Ideal for critical applications in research and development.



## Key advantages

➊ **Defined Interfaces = Predictable and Controlled Risks**  
All system interfaces are clearly defined and fully controlled, minimizing operational uncertainty and safety risks.

➋ **High Mobility and Scalability**  
Can be placed in- or outdoors, relocated or expanded as needed. Supporting flexible deployment and future growth.

➌ **Streamlined Workflows**  
Internal processes are optimized and preconfigured, reducing setup time and increasing operational efficiency.

➍ **Robust Protection**  
Engineered for resilience against fire, seismic activity and others, ensuring continuity in critical environments.

➎ **Field-Proven**  
Developed and tested in real-world applications, the RMC leverages our long-standing expertise in safe tritium handling.

The RMC container hull is certified fire-resistant for REI 90 minutes, built in accordance with DIN EN 1090 standards.

## Standard Setup and Accessories

- Sealed lab floor (up to 1'000 kg/m<sup>2</sup>, decontaminable)
- Fire-safe window EI 90 (stainless-steel frame)
- Transits for gas/ electrics/ data
- High-voltage switchboard (110 or 230V)
- Tritium monitoring & differential air pressure sensors
- Smoke/heat detectors, fire dampers EI 90
- Cloud-based live monitoring of process and safety/ security data, custom graphic user interface (GUI)
- Air conditioning and high-performance ventilation (up to 30x air exchange per hour, two-stage, Class A with heat recovery)

## Safety and Process Data

Optional, all sensor data from the container subsystems is securely integrated into a cloud-based platform, enabling real-time monitoring and remote control from a central interface. Key system data can be linked to existing infrastructure.

Example of subsystems and available data points:

- Tritium system:** process data, valve positions, pressure/vacuum, temperature, activity, pump status
- Lab environment / Maintenance:** temperature, humidity, oxygen, particles, wind, rain / status, service routines
- Ventilation / Fire safety:** airflow speed, volume, differential pressure / fire dampers, smoke & temperature sensors
- Security:** door contacts, motion detectors, thermal imaging
- Radiation safety:** alarm states, trends, threshold monitoring

### Standard sizes

RMC Labs are available in the following sizes\*

Model	9m / 30 feet				6m / 20 feet			
	Inner Dimensions		Outer Dimensions		Inner Dimensions		Outer Dimensions	
Width	2.56m	8.39ft	2.95m	9.68ft	2.56m	8.39ft	2.95m	9.68ft
Length	8.42m	27.62ft	8.85m	29.03ft	5.5m	18.04ft	5.94m	19.49ft
Height	2.50m	8.2ft	2.92m	9.58ft	2.5m	8.20ft	2.92m	9.85ft

\*Shorter versions on request



## Availability and Process

Each RMC Laboratory is individually engineered to meet your specific operational, regulatory, and spatial requirements. We start with a requirements engineering session to ensure a perfect fit, defining all technical parameters together. Once these are clearly established, we conduct a collaborative design workshop.

Following the design freeze (design qualification), the production starts. Before delivery, a comprehensive Factory Acceptance Test (FAT) is carried out on-site at our facility, performed by you or your representatives, to verify full functionality and compliance with all agreed parameters.

The estimated lead time (excluding process equipment integration) is approximately 6–12 months, depending on the complexity of the project.

## Additional Services

Upon request, we also design and manufacture custom automated production equipment, fully tailored to your tritium-related processes.

In addition, we offer individual qualification packages, which may include any or all of the following phases:

IQ – Installation Qualification

OQ – Operational Qualification

PQ – Performance Qualification

These services are available as separate modules, based on your regulatory and internal quality assurance needs.

We strongly recommend ensuring that all machines and processes involved in tritium handling are properly qualified and documented for your specific use case.



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