



# SpaceX-D Manifest

## USOS (U.S. On-Orbit Segment) Cargo

### Launch

#### **Food and Crew Provisions**

- 13 bags standard rations
- 5 bags low sodium rations
- Crew clothing
- Pantry items (batteries, etc)
- SODF and Official Flight Kit

**674 pounds (306 kilograms)**

Food, about 117 standard meals, and 45 low-sodium meals

#### **Utilization Payloads**

- NanoRacks Module 9 for U.S. National Laboratory

**46.3 pounds (21 kilograms)**

NanoRacks-CubeLabs Module-9 uses a 2 cube unit box for student competition investigations using 15 liquid mixing tube assemblies that function similar to commercial glow sticks. Science goals for NanoRacks-CubeLabs Module-9 range from microbial growth to water purification in microgravity

- Ice bricks

For cooling and transfer of experiment samples.

#### **Cargo Bags**

- Cargo bags

**271.1 pounds (123 kilograms)**

Preposition of cargo bags for future flights

#### **Computers and supplies**

- Laptop, batteries, power supply cables

**22 pounds (10 kilograms)**

#### **Total Cargo Mass**

Total Mass Including Packaging

**1,014 pounds (460 kilograms)**

1,146 pounds (520 kilograms)

### Return

#### **Crew Preference Items**

- Crew preference items, official flight kit items

**315 pounds (143 kilograms)**



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### Utilization Payloads

- “Plant Signaling” hardware (16 Experiment Unique Equipment Assemblies)
- Shear History Extensional Rheology Experiment (SHERE) Hardware
- Materials Science Research Rack (MSRR) Sample Cartridge Assemblies (Qty 3)
- Other

### 205 pounds (93 kilograms)

- Plant Signaling seek: to understand the molecular mechanisms plants use to sense and respond to changes in their environment. Ambient Hardware return only; no plant sample return (24 kg)
- SHERE seeks to understand how liquid polymers behave in microgravity by measuring response to straining and stressing. Ambient hardware return; no samples (36 kg)
- MSRR experiments examined various aspects of alloy materials processing in microgravity.
- SETA (Solidification along a Eutectic path in Ternary Alloys-2)
- MICAST/CETSOL (Microstructure Formation in Casting of Technical Alloys under Diffusive and Magnetically Controlled Convective Conditions/Columnar-to-Equiaxed Transition in Solidification Processing )
- Ambient hardware return with samples (9kg)
- Supporting research hardware such Combustion Integrated Rack (CIR) and Active Rack Isolation (ARIS) components, double cold bags, MSG Tapes.



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### Systems Hardware

**760 pounds (345 kilograms)**

- Multifiltration Bed
- Fluids Control and Pump Assembly
- Iodine Compatible Water Containers
- JAXA Multiplexer

### Spacewalk Hardware

**86 pounds (39 kilograms)**

- EMU hardware and gloves for previous crew members

### Total

**1,367 pounds (620 kilograms)**

Total Mass Including Packaging

1,455 pounds (660 kilograms)