Chart City

Chart is a recognized global brand for the design and manufacture of highly engineered equipment used from the beginning to end in the liquid gas supply chain. Our products and know-how are critical components in the separation, delivery and end-use of liquid gases across a multitude of applications in industry and for energy. You probably don’t know, but Chart technologies are integral to many of the processes and items we take for granted every day; all the way from carbonated beverages through to life-saving medical equipment and the space satellite program.

**Engineered Systems**

For Aerospace Applications

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**Construction Codes**

Stationary Storage: ASME Section VIII - Div 1
Portable/Transportable Storage: DOT, TC, ADR, IMDG
Pressure Piping: ASME B31.3, B31.12, B31.1
NFPA: 2, 55, 59A
CGA: 1.3, 4.1, G-5.5
IEST-STD-1246E: Product Cleanliness Levels - Applications, requirements, and determination
KSC-C-123: Specification for Surface Cleanliness of Ground Support Equipment Fluid Systems
Air Force Space Command (AFSPC) Manual 91-710: Eastern & Western Range Safety Regulations

**Certificates / Facility Registrations**

ASME: U-8377
National Board: R-1429
ISO 9001:2015
ISO 14001:2015
OHSAS 18001:2007

**Clients & Customers**

National Aeronautics and Space Administration (NASA)
Jet Propulsion Lab
Space Exploration Technologies Corporation (SpaceX)
Blue Origin, LLC
United Launch Alliance (ULA)
Lockheed Martin Corporation
Oak Ridge National Lab
Ball Aerospace & more

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Scan the code and take a digital tour of Chart City.

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Launch Site & Support Equipment

- Liquid cryogenic propellant storage, LOX, LHN₂, LNG
- Engine test run tanks
- Siphon vessel designs for pumping applications
- High purity cleaning to KSC-C-123J and IEST-STD-1246E standards – stringent particulate and non-volatile residue (NVR) levels
- Liquid conditioning systems including saturation, subcooling and boil off management through auxiliary liquid nitrogen recondensing systems for zero loss applications
- Large liquid withdrawal flow rates with designs to mitigate vortexing (gas ingestion into fluid stream)
- Fast vent systems to support aborted launch scenarios while maintaining safe vessel operating pressures
- Boil off free vent systems for liquid storage/stand by conditions
- Vacuum jacketed withdrawal lines and piping to minimize heat input to propellant during loadings/off loadings
- Advanced FEA analysis on blast loadings, cyclic loadings (pressure and temperature cycles), and acoustical effects
- Cryogenic shop function and proof testing with helium post tanking cold leak test capability
- Helium purge points for subcooled LOX applications
- Ambient pressure builders designed to support liquid withdrawal rates and interconnecting piping nozzle loadings
- Close tolerance customer connection points for ease of installation
- Made in the USA

Your Partner for Liquid Oxygen, Liquid Hydrogen and Liquefied Natural Gas Cryogenic Propellant Systems

- The use of liquid cryogenic LOX and LH₂ propellants for space launch has been around for many years. Recently, liquefied natural gas is replacing RP-1 and solid rocket propellants due to the abundant supply of natural gas in the US market and the cost per launch profile it provides.
- Chart has 55+ years of experience in design, manufacture, test and assembly of advanced cryogenic system equipment in our US-based and global facilities.
- Our team works closely with each of our customers to ensure that the system is designed properly, will function at its peak performance, and will reduce risk to the operator.
- Built for long-term integrity, our system components and product designs provide the highest level of performance at the lowest operating costs.

Engineered Solutions for Aerospace Applications

Engineered for Efficiency—Built to Last

Cryogenic Systems Projects
Chart has successfully supplied cryogenic propellant storage tanks, vacuum insulated piping, pump, and control systems as turnkey packages to many governmental, research, and aerospace clients.

Propellant Storage

Vacuum Insulated Pipe

Cryogenic Umbilical Hoses

Ambient Vaporizers/Pressure Builders

Mississippi Barge Transport to CCAB