



Innovation. Experience. Performance.®

## PRODUCT PORTFOLIO



Chart Ferox, Gofa and Flow Instruments are wholly owned subsidiaries of Chart Industries Inc. (Nasdaq GTLS). Together we provide a complete portfolio of distribution, storage and end-use equipment for cryogenic bulk liquids - nitrogen, oxygen, argon, nitrous oxide, carbon dioxide, natural gas, natural bio-gas and ethylene.

### Chart delivers

- Cryogenic tanks up to 1000 000 liters storage capacity
- Transportable and stationary cryogenic vessels from 120 to 3000 liters capacity
- LNG terminals & satellite plants
- LNG bunkering stations & on-board fueling systems for ships
- Cryogen storage systems for food, medical and industrial gases
- Mobile and stationary LNG fueling stations for heavy duty vehicles,
- ISO containers and semi - trailers complete with Flowcom, Chart's highly accurate metering system

Products are engineered and manufactured in-house to ensure maximum quality. We pride ourselves on our expertise, responsiveness and customer support.



© 2014, Chart Inc.

Tel. +420 601 342 831 • [www.chart-ferox.com](http://www.chart-ferox.com) • [ferox-sales@chartindustries.com](mailto:ferox-sales@chartindustries.com)



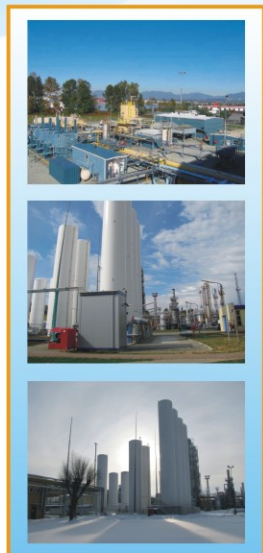


Innovation. Experience. Performance.®

## Small Scale LNG Value Chain Solutions

Chart Ferox designs and builds highly engineered systems and equipment delivering Liquefied Natural Gas (LNG) as a safe, economical, clean burning fuel alternative to diesel.

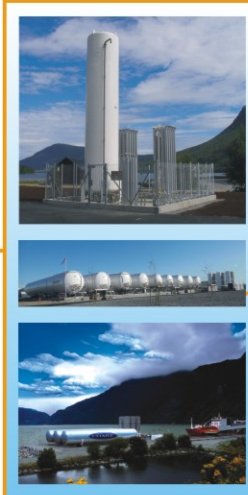
### Liquefaction & Storage



### Distribution



### Re-gasification Stations & Small Terminals



### Fueling



### End user



#### • LNG Satellite Stations & Terminals

LNG multifunctional storage and distribution plants for intermediate storage and direct usage of gas or liquid assigned for regasification plants, liquefier storage and distribution plants, and coastal receiving plants.

#### • LNG/LCNG Vehicle Fueling Stations & On-board LNG Systems

LNG/LCNG fuelling stations and on-board LNG fuel systems for heavy duty trucks, buses and other high horsepower LNG vehicles.

#### • LNG Ship On-board Systems & Bunkering Stations

On-board LNG fuelling systems for ship propulsion and bunkering stations.

#### • LNG Mobile Equipment

A complete range of semi-trailers, truck mounted units, LNG ISO intermodal containers and swap bodies for distributing LNG anywhere in the world by water, road or rail.



© 2014, Chart Inc.



## Cryogenic Storage Systems for Food, Medical and Industrial Gases

### ► *Liquid Nitrogen Applications*

Turnkey solutions for the storage, and distribution of liquefied nitrogen (LIN) from the storage vessel to the end use application. Examples include food preservation and storage of biological samples.



### ◀ *Nitrogen Storage and Vaporization Package on FLNG projects*

Chart Ferox designs and manufactures complete LIN storage, vaporizing and distribution packages that are proven offshore on floating platforms.

Installation of LIN package is on one of several modules on the board of floating platform, used for mining and processing of natural gas from deposits from the sea bottom.

### ► *Liquid Nitrogen Dosing Systems*

Chart Ferox's LIN dosing technology is used for the inert protection of sensitive liquids and pressurization of bottles and cans across a range of different industries. We engineer and manufacture the complete system from the storage tank, through the vacuum insulated pipe to the dosing machine.







Innovation. Experience. Performance.®

## Cryogen Storage Systems for Food, Medical and Industrial Gases

### ► *Storage, Vaporization and Distribution Systems for Medical Oxygen*

Tailor made vehicle systems for delivering medical grade liquid oxygen to cryogenic storage tanks. Our solutions include the tanks, vaporizer and final pressure regulation unit feeding gaseous oxygen to the distribution network.



### ◀ *Industrial and Medical Gas Filling Stations*

Special improved design of cryogenic pump tanks for optimal delivery of liquefied industrial gas from storage tanks by pump transfer to high pressure cylinders and bundles.

### ► *CO<sub>2</sub> dosing system*

The pH value of desalinated sea water is kept neutral by adding dosed carbon dioxide. Chart Ferox delivers complete CO<sub>2</sub> dosing systems including storage tanks and ambient vaporizers.



### ◀ *Special Gases Storage and Vaporization Systems*

Cryogenic systems for storing and vaporizing special industrial gases such as ethylene, hydrogen, helium, monosilane and others.





Innovation. Experience. Performance.®

## Bulk Storage for Industrial Gases



### • *Standard and Engineered Tanks*

Designed and built by Gofa, Chart offers ISO intermodal containers for the transportation of bulk cryogenic liquids such as nitrogen, oxygen, argon, nitrous oxide, carbon dioxide, natural gas and ethylene. Available in both 20ft and 40ft sizes the containers can be transported anywhere in the world by road, ship or rail.



© 2014, Chart Inc.

Tel. +420 601 342 831 • [www.chart-ferox.com](http://www.chart-ferox.com) • [ferox-sales@chartindustries.com](mailto:ferox-sales@chartindustries.com)





Innovation. Experience. Performance.®

## Mobile Equipment

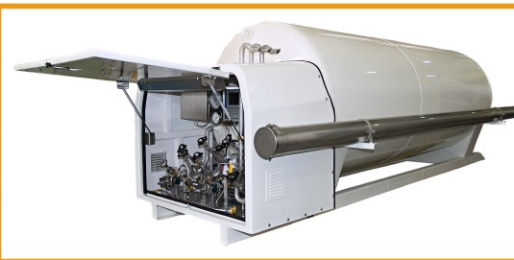
### • *ISO Intermodal Containers*

Designed and built by Gofa, Chart offers ISO intermodal containers for the transportation of bulk cryogenic liquids such as nitrogen, oxygen, argon, nitrous oxide, carbon dioxide, natural gas and ethylene. Available in both 20ft and 40ft sizes the containers can be transported anywhere in the world by road, ship or rail.



### • *Delivery Units*

Delivery units are designed for transportation of liquid nitrogen, oxygen and argon. Capacities range from 6000 to 14000 litres with pump, or high pressure vessel for pressure discharge.



### • *Semi-trailers & Truck-mounted Units*

Semi-trailers and truck mounted units equipped with electric or hydraulic pumps. Our CO<sub>2</sub> range offers removable swap bodies.



A Chart Industries Company



© 2014, Chart Inc.





Innovation. Experience. Performance.®

## Packaged Gases

### • *SPV & MPV*

Euro-Cyls are transportable storage and supply vessels with capacities from 120 to 1000 litres and pressure range from 1.5 to 37 bar. The full range is available for liquefied nitrogen, oxygen, argon, nitrous oxide and carbon dioxide and the larger 600 and 100 litre models for LNG.



### • *MicroBulk Solutions – Orca & PermaCyl*

Microbulk is a fast, reliable and accurate on-site filling system that combines our ORCA road tanker and Perma-Cyls.

**Perma-Cyls** are stationary vessels dedicated for on-site delivery with capacities from 230 to 3000 liters and pressure range from 18 to 37 bar.



**ORCA** is a fast filling cryogenic tanker with ADR and EN 13 530 compliance. A submerged pump eliminates cool down losses and reduces delivery time.



Flow meter  
Flowcom 3000 with MID approval





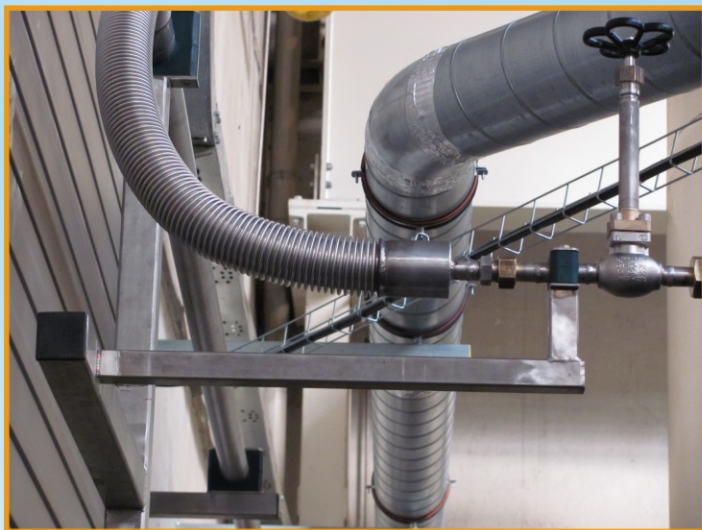


Innovation. Experience. Performance.®

## Systems

### • Vaporizers

Ambient vaporizers are designed for vaporation and superheating of liquefied gases such as oxygen, nitrogen, argon, natural gas, carbon dioxide and nitrous oxide. The capacity of the standard models is up to 4 000 Nm<sup>3</sup>/h flow in one module.



### • VIP & MVIP

Vacuum Insulated Piping (VIP) is fully factory fabricated and tested and supplied in engineered sections for simple site installation using bayonet couplings.

Modular vacuum insulated pipe (MVIP) is supplied in predefined section lengths and available from stock.

Chart Ferox can design, build and install cryogenic system solutions regardless of complexity.

### • Application & Services

We offer repair and refurbishment of cryogenic products and more. The repair facility is fully integrated with our manufacturing site so any repairs will always incorporate the latest in equipment design and manufacturing processes. Our expertise in vacuum investigation, re-insulation and piping repair is your guarantee that all cryogenic equipment is restored to full operating conditions.

### • Parts

For complete range of spare parts and accessories please visit: [www.feroxparts.com](http://www.feroxparts.com)



Innovation. Experience. Performance.®

Chart Ferox, a.s.

Ustecka 30, 405 30 Decin, Czech Republic

Tel.: +420 412 507 343

Fax: +420 412 507 297



A Chart Industries Company



A Chart Industries Company



© 2014, Chart Inc.

Tel. +420 601 342 831 • [www.chart-ferox.com](http://www.chart-ferox.com) • [ferox-sales@chartindustries.com](mailto:ferox-sales@chartindustries.com)