



SinoCleansky



中国华科

SINOCLEANSKY



北京华科天洁科技有限责任公司
BEIJING SINOCLEANSKY TECHNOLOGIES CORP

Company Profile >>>

Beijing SinoCleansky Technologies Corp is a professional gas equipment company with expertise in industrial gas, energy, medical, welding & cutting, fire-fighting, water treatment, nitrogen purging and other applications, offering a one-stop-solution with wide range of gas equipment, as well as customized service.

SinoCleansky Industrial Gas Equipment & Engineered Solutions:

Jumbo Tube Skid/Container/Trailer;

T75 & T50 ISO Tank Container;

Cryogenic Equipment: microbulk tank, cylinders, storage tanks, lorry tankers, ISO tanks, etc.;

High pressure gas cylinders, incl steel, aluminum, and composite cylinders;

Welded cylinders for liquid chlorine, FM200, acetylene, etc;

ASU & PSA solutions, Industrial gas filling stations solutions, etc.

SinoCleansky CNG & LNG Equipment & Engineered Solutions:

Beijing SinoCleansky Technologies Corp specializes in Natural Gas industry and supplies an overall solution for CNG/LNG/NGV with product, technology and service, including: CNG & LNG Vessel; CNG jumbo tube container; LNG T75 ISO Tank container; Mini LNG Plant; Engineered Solutions for professional clients of L-CNG/LNG station, LNG regasification and etc.

SinoCleansky gas equipments are in accordance with the most stringent international standards, approved and certified by international inspection authorities which ensure a long-term safe and good use, with a good industry reputation.

公司简介 >>>

北京华科天洁科技有限责任公司是一家专注于气体设备和能源装备的专业技术公司。秉承专业业务，依靠优秀团队，立足中国制造，覆盖国际市场。

华科公司致力为国际市场提供优良的中国产品和技术：

- 工业气体设备：气瓶，储罐，设备和工程；
- CNG/LNG/NGV：产品，系统，服务；
- 专用机电设备与技术；

自2006年成立以来，华科公司为全球工业气体和天然气行业客户提供了可靠的产品和方案同时还服务于焊割、医疗、消防、水处理等众多行业客户。

华科公司以“让天空更洁净”为使命，立志成为全球用户的最优中国设备供应商。华科人专业专心，以优秀服务和优良产品，成为客户的终身伙伴。海纳百川，追求卓越。华科天洁愿与国内外广大客户和供应商真诚携手，长期合作！



SinoCleansky
Gas Container & Solution

Jumbo Cylinder (Container, Skid, Trailer)

"Ideal Solution for CNG and Industrial Gases Storage and Transportation"



Jumbo cylinder produced as per ISO11120, DOT, or ASME standard, with TPED approval. Jumbo tube container with ADR, IMDG and RID certificate, and inspection report issued by BV, LRS, TUV or equivalent international third-party.

Application

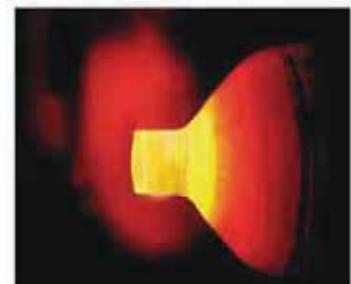
SinoCleansky jumbo cylinder skid / container / trailers are widely used for ground stationary storage and intermodal transportation.

The filling medium including CNG and various industrial gases such as Hydrogen, Argon Nitrogen, Helium, Purified Gas, Compressed Air, etc.



Features of SinoCleansky high-pressure jumbo gas cylinder

- Heat-spinning technology;
- Walking beam continuous heat treatment;
- Large-size structure and fewer valves, tubes and joints;
- Concise design, less maintenance on site;
- Lower weight of design;
- Additional gas-filling devices.



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Beijing SinoCleansky Technologies Corp.



SinoCleansky
Gas Container & Solution



Popular Type for Industrial Gas and Hydrogen and CNG

Model No.	SCS0825CS-40F-559	SCS0925CS-40F-559	SCS1025CS-40F-559	SCS1125CS-40F-559	SCS1225CS-40F-559	SCS1225CS-20F-559
Cylinder quantity	8	9	10	11	12	12
Working pressure/MPa	25	25	25	25	25	25
Cylinder size/mm	OD559x17.4x10975	OD559x17.4x10975	OD559x17.4x10975	OD559x17.4x10975	OD559*17.4*10975	OD559*17.4*5400
Steel type	4130X	4130X	4130X	4130X	4130X	4130X
Working temperature	-50-65°C	-50-65°C	-50-65°C	-50-65°C	-50-65°C	-50-65°C
Equipment weight /KG	25752	28721	31490	34259	37028	19632
Water volume/M ³	17.68	19.89	22.1	24.31	26.52	12.6
Filling gas volume /NM ³	5569	6265	6961	7657	8353	3969
Total weight/KG	29730	33197	36462	39728	42995	22467
Skid/Trailer dimension	12192x2438x1400	12192x2438x1890	12192x2438x1890	12192x2438x1890	12192x2438x2000	6058x2438x2000

★ For Hydrogen, the jumbo tube working pressure is 20mpa, other data will be adjusted accordingly.

Light Type for CNG

Model No.	SCS0825CS-40F-559	SCS0925CS-40F-559	SCS1025CS-40F-559	SCS1125CS-40F-559	SCS1225CS-40F-559	SCS1225CS-20F-559
Cylinder quantity	8	9	10	11	12	12
Working pressure/MPa	25	25	25	25	25	25
Cylinder size/mm	OD559*14.8*11570	OD559*14.8*11570	OD559*14.8*11570	OD559*14.8*11570	OD559*14.8*11577	OD559*14.8*4950
Steel type	30CrMoLX	30CrMoLX	30CrMoLX	30CrMoLX	30CrMoLX	30CrMoLX
Working temperature	-50-65°C	-50-65°C	-50-65°C	-50-65°C	-50-65°C	-50-65°C
Equipment weight /KG	24240	27020	29600	32180	34760	17580
Water volume/M ³	19.6	22.05	24.5	26.95	29.4	12.792
Filling gas volume /NM ³	6174	6945	7717	8489	9261	4029
Total weight/KG	28650	31981	35112	38243	41375	20480
Skid/Trailer dimension	12192x2438x1400 (skid)	12192x2438x1890 (skid)	12192x2438x1890 (skid)	12192x2438x1890 (skid)	12192x2438x2000 (skid)	6058x2438x2000 (skid)

Remark: 1. The data of filling gas volume, loading weight and total weight is based on CNG.

2. The above specifications are only for our typical types. The more accurate & detailed parameters and technical drawings are available upon request.

Shipment



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Beijing SinoCleansky Technologies Corp.



SinoCleansky
Gas Container & Solution

Cryogenic ISO tank container

"We SinoCleansky specialize in designing and manufacturing cryogenic tank container since year 2006 with rich experience"



Product Features

- Technology: high-vacuum multi-layer insulation
- Application: LOX, LIN, LAr, LCO₂, LN₂O, LNG storage and transportation
- Standard: GB150, EN13530, ASME and other international standards
- Lloyd's Register CSC Certificate, BV Certificate and CCS Certificate

Specifications

Capacity: 10ft, 20ft, 40ft, with various capacities.

Working pressure: 0.8MPa, 1.6MPa, 1.8MPa, 2.2MPa, etc

Typical types

Standard	Type number	Filling medium	Working pressure	Water capacity	Material Inner / outer vessel
ASME	TCSCS-D22C(T75-20FT-8BAR)	LOX / LIN / LAr	0.8MPa	21.7M ³	SA-240M 304/Q345R
ASME	TCSCS-D21DB(T75-20FT-16BAR)	LOX / LIN / LAr	1.6MPa	21M ³	SA-240M 304/Q345R
ASME	TCSCS-D21D(T75-20FT-16BAR)	LOX / LIN / LAr / LNG / LC ₂ H ₆ / LC ₃ H ₈	1.6MPa	21M ³	SA-240M 304/Q345R
ASME	TCSCS-D21EB(T75-20FT-22BAR)	LOX / LIN / LAr / LCO ₂ / LN ₂ O	2.2MPa	21M ³	SA-240M 304/Q345R
EN13530	TSCSC-D22D(T75-20FT-18BAR)	LOX / LIN / LAr	1.8MPa	21.7M ³	1.4315/Q345R
EN13530	TCSCS-D22B(T75-20FT-18BAR)	LOX / LIN / LAr / LNG / LN ₂ O / LC ₂ H ₆ / LC ₃ H ₈	1.8MPa	21.7M ³	1.4315/Q345R
EN13530	TCSCS-D22E(T75-20FT-18BAR)	LOX / LIN / LAr / LN ₂ O	1.8MPa	21.7M ³	1.4315/Q345R
EN13530	TCSCS-A21A(T75-20FT-22BAR)	LOX / LIN / LAr / LCO ₂ / LNG / LN ₂ O / LC ₂ H ₆ / LC ₃ H ₈	2.2MPa	21.4M ³	1.4315/Q345R
GB	GXSCS-A22B(T75-20FT-22BAR)	LCO ₂	2.2MPa	21.6M ³	WH590E/Q345R
ASME	TCSCS-U46F(T75-40FT-8BAR)	LNG (with emergency shut-off valve)	0.8MPa	45.7M ³	SA-240M 304/Q345R

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SinoCleansky
Gas Container & Solution

Customized service

- With or without pump
- Chinese pump or France Cryostar pump, USA Smith pump
- Dedicated or versatile for filling



Operation box with pump



Without pump



Vaporizer(PBU)



valves

T50 ISO Tank

SinoCleansky T50 ISO Tanks cover a wide range of filling medium, incl R22, R124, R12, R21, R152A, R40, R114, R12B1, R142B, R500, R134A, Propene, Ethylene, LPG, Chlorine (Cl₂), LSO₂, NH₃, and so on.

- Detail pictures show



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SinoCleansky
Gas Container & Solution

SinoCleansky Microbulk Tank

SinoCleansky microbulk tanks offer a better solution of end-to-end liquid gas delivery, replacing all your costly gas cylinders. It improves gas transportation, charging and storage management greatly. An ideal solution for medium size customers in industries, medical, cutting, lab and etc.

More reliable, safe, efficient and economical, compared with high pressure gas cylinders and dewar flasks.

Superior performance: bigger capacity, longer storage period, higher flow rate, fast pressure build-up. It is the best and only solution for your laser cutting of thick metal!

All models for your selection: capacity 1000L, 2000L, 3000L, 5000L; Working pressure 16bar, 25bar, 35bar.



SinoCleansky Microbulk Tanks benefits

- It is an on-site filling solution for gas cylinder users.
- The charge loss is low or even zero.
- Longer liquid gas hold times.
- Extraordinary thermal quality assures very little gas loss.
- The boost speed is fast and the gas flow is large.
- Quick recharge to save time and reduce costs.
- Multiple pressures, different volumes, more choices.
- Brand valves HEROSE, REGO, accessories, high reliability.
- Small footprint, convenient transportation, simple installation.
- Less operation and maintenance needed.

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Models and Technical Parameters

Typical Model Specification of Microbulk Tank								
Full volume(L)	1040		2107		3031		5168	
Effective volume(L)	988	957	2002	1938	2879	2798	4910	4755
Working pressure(MPa)	1.6	3.5	1.6	3.5	1.6	3.5	1.6	3.5
Vessel sort	II							
Surface treatment	Mirror surface Ra 0.025							
Thermal-insulating type	High vacuum Multi-layers thermal-insulating							
Base-supports structure	Saddle base							
Material	Inner vessel:SA-240 Type304/Outer cylinder:SA-240 Type304							
Specification	ASME							
Loading media and filling weight								
LOX (NM ³)	789	764	1598	1548	2299	2226	3920	3796
LIN (NM ³)	635	615	1287	1246	1851	1793	3157	3057
LAR (NM ³)	772	747	1563	1514	2249	2178	3834	3713
Product Parameters								
Gas flow rate	40		75		75		100	
Evaporation (LIN)	≤0.7%		≤0.6%		≤0.5%		≤0.4%	
Empty weight(kg)	730	885	1170	1490	1750	2180	2613	3265
Base Dimensions(mm)	1250*1250*2245		1500*1500*3060		1700*1700*3180		2100*2100*3150	

SinoCleansky microbulk tank can be also used for LCO, and LNG
Contact SinoCleansky for detailed drawing design and specification.

Detailed pictures





SinoCleansky
Gas Container & Solution

Cryogenic Cylinder

"SinoCleansky's vast array of models offer everything you need to transport, store and dispense liquefied gases safely and securely"



Product Features

- Technology: high-vacuum multi-layer insulation
- Application: LOX, LIN, LAR, LCO₂, LNG storage and transportation.
- Standard: DOT-4L, EN1251, GB24159, ASME, and other international standards
- High-performance super insulation
- Minimum product vapor loss
- Convenient storage and transportation
- Customized vaporization coils provide constant gas flow rates

Product Introduction

Manufacturing standards: DOT-4L, EN1251, GB (Chinese standard), etc.

Water capacity: 175L - 1000L

Working pressure: 1.37MPa, 1.59MPa, 2.02MPa, 2.3MPa, 2.4MPa, 2.88MPa, 3.45MPa, etc.

Typical types (Vertical)

Standard	Type
GB24159	DPL450-175L/195L/210L-1.37 MPa
GB24159	DPL450-175L/195L/210L-2.3 MPa
GB24159	DPL450-175L/195L/210L-2.88 MPa
GB24159	DPL450-175L/195L/210L-3.45 MPa
GB24159	DPL450-232L-1.37 MPa
GB24159	DPL450-232L-3.45 MPa
ASME	BC500-208L-2.07MPa(LCO ₂)
ASME	BC750-344L-2.07MPa(LCO ₂)

Standard	Type
EN1251	EN160HP(175L-2.4 MPa)
EN1251	EN180HP(197L-2.4 MPa)
EN1251	EN200HP(216L-2.4 MPa)
DOT-4L	CT160HP(175L-2.02MPa)
DOT-4L	CT180HP(195L-2.02MPa)
DOT-4L	CT200HP(205L-2.02MPa)
DOT-4L	CT240HP(250L-2.02MPa)





SinoCleansky
Gas Container & Solution

Big capacity popular types (Vertical / Horizontal optional)

Standard	Type
GB24159	DPL700-410L-1.37Mpa Vertical
GB24159	DPL700-500L-1.37Mpa Vertical
GB24159	DPL700-410L-2.3Mpa Vertical
GB24159	DPL710-500L-2.3Mpa Vertical
GB24159	DPW650-410L/499L-1.59Mpa Horizontal
GB24159	DPW650-499L-2.5Mpa Horizontal
GB24159	DPW650-499L-3.45Mpa Horizontal



Customized Model Case

Manufacture standard: GB24159
 Water capacity: 410L to 500L
 Working pressure: 1.37MPa, 1.59MPa, 2.3MPa, 3.45MPa
 Filling Medium: LOX / LIN / LAr, LCO₂, LNG
 Vaporization: $\leq 40\text{Nm}^3/\text{h}$



Detail pictures



Vaporizer



Name card



Valves



Pressure gauge

Shipment





SinoCleansky
Gas Container & Solution



Cryogenic Storage Tank

"One-stop solution of liquid gases incl tank, pump and vaporizer"

We SinoCleansky specialize in development and production cryogenic tank since year 2006, with rich experience. The products are widely used in the LNG and other liquid industrial gas stationary storage, including LOX, LIN, LAr, LCO₂, etc.

Our product with High-vacuum multi-layer insulation or vacuum perlite insulation. To provide high-performance equipment, we make a series of stringent tests, including automatic welding process, X-ray and ultrasonic tests, Vacuum production and testing, hydraulic tests, leak test for inner vessel, etc.

Cryogenic tank

Type: vertical, horizontal

Manufacture standard: GB, ASME, EN

Capacity: 1M³ - 1000M³

Working pressure: 0.8MPa, 1.6MPa, 2.0MPa, 2.4MPa, etc

Medium: LOX, LIN, LAr, LCO₂, LNG



Detail pictures





SinoCleansky
Gas Container & Solution



Typical model

Standard	Volume	Working Pressure	Medium
ASME/GB	5M ³	8bar	LOX/LIN/LAr
ASME/GB	5M ³	16bar	LOX/LIN/LAr
ASME/GB	10M ³	8bar	LOX/LIN/LAr
ASME/GB	10M ³	16bar	LOX/LIN/LAr
ASME/GB	15M ³	8bar	LOX/LIN/LAr
ASME/GB	15M ³	16bar	LOX/LIN/LAr
ASME/GB	20M ³	8bar	LOX/LIN/LAr
ASME/GB	20M ³	16bar	LOX/LIN/LAr
ASME/GB	30M ³	8bar	LOX/LIN/LAr
ASME/GB	30M ³	16bar	LOX/LIN/LAr
ASME/GB	5M ³	22bar	LCO ₂
ASME/GB	10M ³	22bar	LCO ₂
ASME/GB	15M ³	22bar	LCO ₂
ASME/GB	20M ³	22bar	LCO ₂
ASME/GB	30M ³	28bar	LCO ₂
ASME/GB	60M ³ 120M ³ 150M ³ 200M ³ 500M ³ 1000M ³	8bar	LNG

- ASME standard with or without U stamp .
- With third party test reports
Factory test reports .
- With international brand valves or China brand valves.
- Custom-made service for Labels and name plates.
- The warranty period for valves and gauges is one year. The warranty period for storage tank vacuum and painting is three years.
- We provide one-stop solution for our clients, and supply customized cryogenic equipment, incl vaporizer and pump.

Shipment



Related equipment-vaporizer/pump





SinoCleansky
Gas Container & Solution

Cryogenic Lorry Tanker (Semi-Trailer)

We keep devoting ourselves to the development and production of cryogenic liquid lorry tanker. The products are widely used in the LNG and other liquid industrial gases storage and transport.

Full range of Lorry Tanker

Manufacture standard: GB, ASME, EN

Capacity: 3M³- 57M³.

Working pressure: 0.3MPa, 0.8MPa, 1.6MPa, 2.0MPa, 2.4MPa, etc

Medium: LOX, LIN, LAr, LCO₂, LNG

Cryogenic Lorry Tanker for Industrial gas & LNG without chassis

Insulation: High-vacuum multi-layer insulation.

Volume: 792- 5283gal / 3M³-20M³

MAWP: 0.3Mpa, 0.8MPa, 1.6MPa, 2.0MPa, 2.4MPa, etc

Medium: LOX, LIN, LAr, LCO₂, LNG

MicroBulk Delivery Systems (with pump & meter)

Insulation: High-vacuum multi-layer insulation.

Volume: 1057-5283 gal / 4-20M³

Discharging pressure: 0.8-3.5MPa/0.8-1.6MPa

Medium: LOX, LIN, LAr, LCO₂, LNG

We only provide Loading part of lorry tanker, without chassis and head.



Operating box



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SinoCleansky
Gas Container & Solution



Cryogenic Semi-trailer for industrial Gas LOX,LIN,LAr

NO	NAME	LOX Semi-trailer	LIN Semi-trailer	LAr Semi-trailer	
1	Model No	SCS-GB-27.39M ³ -0.3MPA	SCS-GB-37.2M ³ -0.3MAP	SCS-GB-22.8M ³ -0.3MAP	
2	Total Volume	27.39M ³	37.2M ³	22.8M ³	
3	Effective Volume	25.47M ³	34.6M ³	21.2M ³	
4	Working Pressure	0.3MPA	0.3MPA	0.3MPA	
5	Loading Medium	LOX	LIN	LAr	
6	Design Code	GB(Chinese Standard)	GB(Chinese Standard)	GB(Chinese Standard)	
7	Main Material	Inner Vessel	S30408	Inner Vessel	S30408
		Outer Vessel	Q345R	Outer Vessel	Q345R
8	Design Temperature	-196/50℃	-196/50℃	-196/50℃	
9	Isolating Type	High Vacuum Multilayer Insulating	High Vacuum Multilayer Insulating	High Vacuum Multilayer Insulating	
10	Total Net Weight	10940KG	12080KG	10445KG	
11	Dimensions	12065×2520×3455mm	12720×2520×3700mm	11950×2520×3290mm	

Cryogenic Semi-trailer for LCO₂

NO	NAME	PARAMETERS
1	Model No	LCO ₂ Semi-Trailer
2	Design Volume	29.7M ³
3	Working Pressure	2.2Mpa
4	Loading Medium	LCO ₂
5	Design Code	GB (Chinese Standard)
6	Main Material(Inner Vessel)	WH590E
7	Design Temperature	-40/+50℃
8	Isolating Type	Foam
9	Total Weight	40000KG
10	Equipment weight	13270KG
11	Rated loading weight	26730KG
12	Dimensions	12610X2500X3630mm

Cryogenic Semi-trailer for LNG

NO	NAME	PARAMETERS	
1	Model No	SCS-ASME-52.6M ³ -0.7MPA	
2	Total Volume	52.6M ³	
3	Effective Volume	47.34M ³	
4	Working Pressure	0.7Mpa	
5	Loading Medium	LNG	
6	Design Code	ASME	
7	Main Material	Inner Vessel	S30408/S30408III
		Outer Vessel	Q345R/16MnII
8	Design Temperature	-196/50℃	
9	Isolating Type	High Vacuum Multilayer Insulating	
10	Total Net Weight	17440 KG	
11	Dimensions	13000x2500x3800mm	

Remark: 1. All the semi-trailer is with chassis without tractor head.
2. The parameter is for reference, the final datasheet based on production drawing.





SinoCleansky
Gas Container & Solution



Regasification Skid With Engineered Solution

LNG, Industrial

LNG regasification standard station process

- ① Unloading skid: step-up and constant pressure for LNG tankers unloading liquid, LNG tankers to reach the normal to the LNG storage tank infusion pressure difference, with the LNG tankers filling function.
- ② LNG storage tank skid: for LNG storage and for the fluid.
- ③ LNG gasification output skid: for LNG gasification, filter, pressure regulator, metering, odorizer, so that post-gasification of nature gas in accordance with the requirements of the user constant temperature and constant pressure of the output.

LNG Regasification and Regulating skid(include metering and odorization)

Working pressure: 0.2-3.0MPa
Single vaporizer capacity: 100-100000Nm³/H



LNG Pump Skids



LNG Pump Skid system includes:

LNG immersed pumps (including pump pool, single pump, or double pump), pneumatic stop valve, BOG vaporizer storage tanker booster, instrument system, electronic control system, thermal insulation pipeline, packaging frame and LNG liquid filling machine, etc.

- Flow: 12-25m³/H (single pump)
- Lift: 140-240m

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L-CNG Pump SKids



L-CNG pump Skid system includes:

L-CNG high pressure reciprocating pumps , pneumatic valve, instrument and electrical system, thermal insulation pipeline, packaging frame and etc.

- Flow: 500-5000L/H (liquid state)
- Max exit pressure: 27.5Mpa

Industrial gases regasification and filling station process

Cryogenic liquid gas filling system and collective gas supply system flow (for one cryogenic storage tank by high-pressure filling system and cryogenic collective gas supply system).



Vehicle-mounted High-Pressure Liquid Nitrogen Pumps Skids:

SinoCleansky produce outdoor operation mobile pump skid(trolley)system such as vehicle-mounted high-pressure liquid nitrogen pump skids for mining oilfields and gas fields, large flow liquid nitrogen pump skids for natural gas pipeline nitrogen purging. The system is suitable for long distance transportation; and enjoys high reliability.



- Flow: 50-15000L/H (Liquid state)
- Max exit pressure: 70MPa
- The system (pump skid) integration level is high; all components are installed in a complete manner: power system (fuel generator set/generator set), pump, vaporizer, control system, pipeline, fuel supply system.
- The system utilizes point monitoring and PLC control; automatic operation of the system can be realized.
- Simple operation and outdoor design.



SinoCleansky
Gas Container & Solution



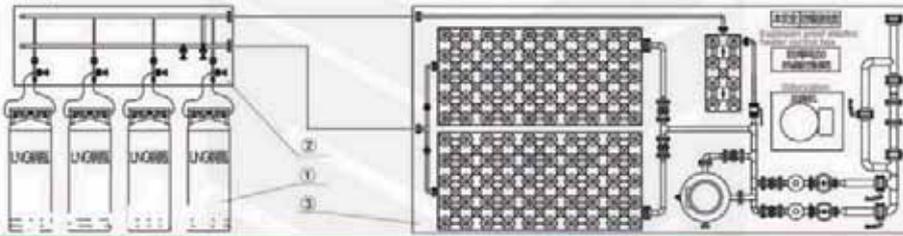
LNG Satellite Station

Beijing SinoCleansky Technologies Corp specializes in natural gas industry and supplies a one-stop-solution for LNG and CNG with product, technology and service.

For professional clients of Mini LNG, LCNG satellite station, LNG regasification and etc, SinoCleansky takes its industrial experience and technology expertise to provide the excellent customized technical solutions.

LNG cylinder group regasification skid process

- ① LNG cylinders group: for LNG transfer, storage, and supply solution.
- ② LNG periportal skid: for LNG and BOG gas assemble and transported to LNG gasification output pry.
- ③ LNG gasification output skid: for LNG gasification, complex heat, pressure regulator, metering, odorizer, so that post-gasification of nature gas in accordance with the requirements of the user constant temperature and constant pressure of the output.



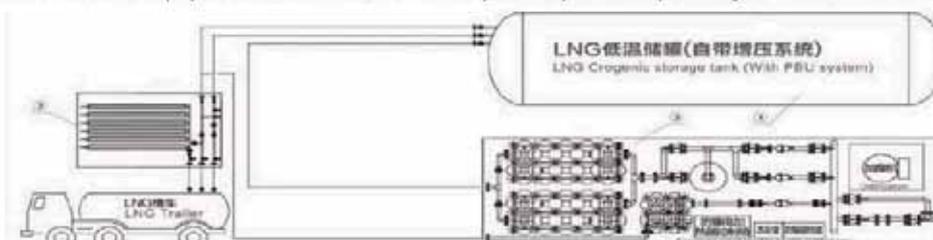
SKid-mounted modular microblk (small LNG satellite station)

Microbulk LNG satellite station is a smart and modular design for small LNG applications. The whole LNG station is built on skid, with LNG storage, regasification pressure regulation, measurement, odorization etc, which is very convenient for installation and operation. Typical models are 1M³, 2M³, 3M³, 5M³, 7M³. Customization is available upon your specific requirements.



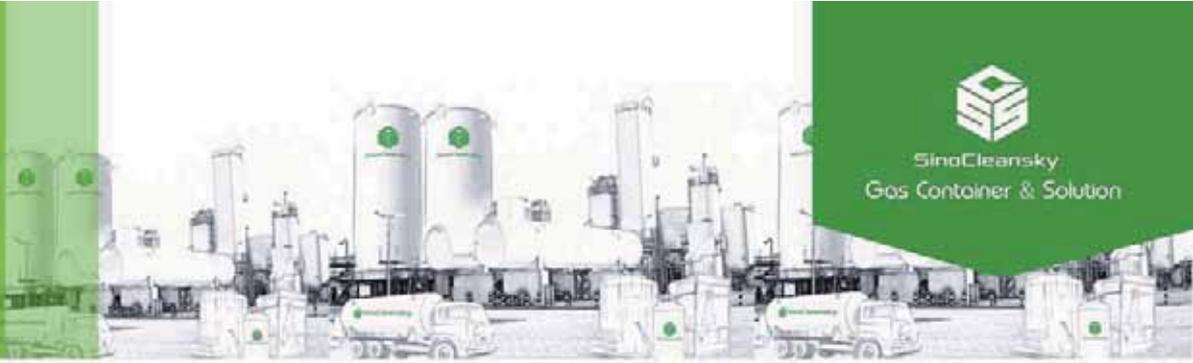
LNG regasification skid process

- ① LNG storage tank skid: for LNG storage and the fluid supply, generally purchased or provided directly by the user.
- ② Unloading PBU skid: for boosting and the constant pressure when the LNG tanker unloading fluid, then the LNG storage tanks can reach the normal fluid pressure difference, so the LNG tankers can irrigation charging.
- ③ When the flow rate $\geq 1000\text{Nm}^3/\text{h}$, it is recommended LNG vaporizer prized separately or foundational separately on-site.



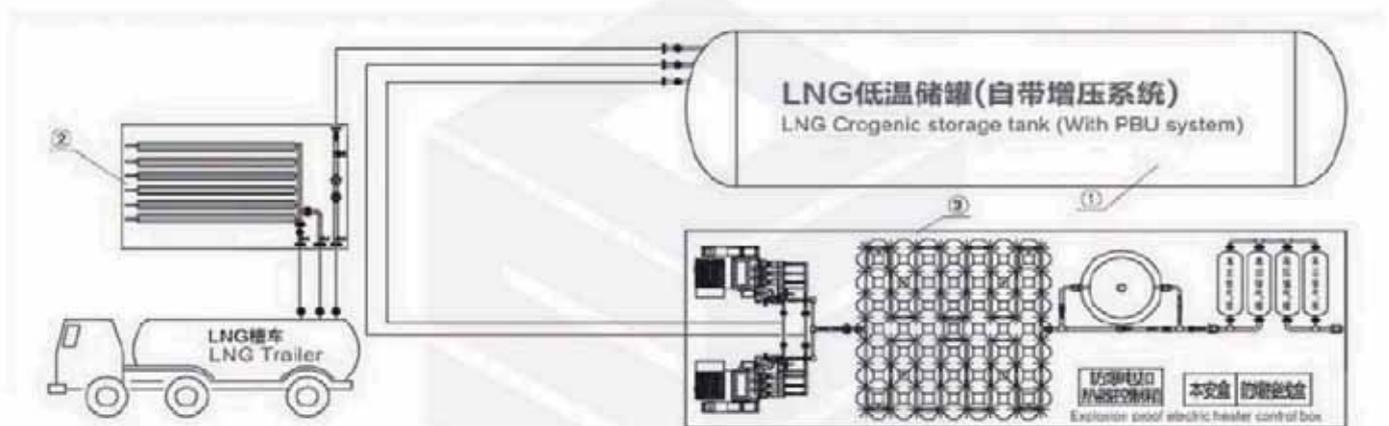


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L-CNG vehicle refueling skid process

- ① LNG storage tank skid: for LNG storage and the fluid supply. (Horizontal tank comes with pressurized systems, pressurized vertical storage tank deprovision pry)
- ② Unloading PBU skid: for boosting and the constant pressure when the LNG tanker unloading fluid, then the LNG storage tanks can reach the normal fluid pressure difference, so the LNG tankers can irrigation charging.
- ③ LNG pump and Vaporizer skid.



Guide for LNG Solution Model Selection

Gas consumption Nm ³ /day	Product Name	Max. Gas Supply NM ³ /H
Below 200	Cylinders	N·7/N·11
100~2,000	Gas Cylinder Group Skid Station	200 Typical models: 100,150,200NM ³ /H
Around 1000	Micro Bulk Station	200
500~1000	Modular Gasification Station	2000
For NGV	LNG Refilling Station L-CNG Refilling Station	

Case on site





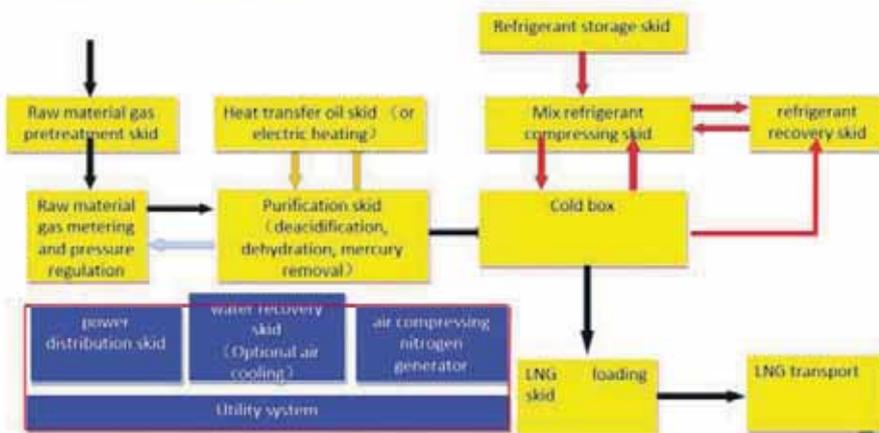
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Skid-mounted Mini LNG Solution



- The proven solution for making LNG on Mini-scale, more efficient and effective than ever;
- Core technology and own complete process package of MRC for Mini LNG;
- SinoCleansky, has the first and only test platform for Mini LNG, caters for all your demands on Mini LNG with dynamic tests.

Flow chart of Mini-LNG plant





Specs of demo Mini-LNG plant

Daily capacity : 50000Nm³/day

● Raw material gas pressure regulate , metering

Design flow rate 2291.3Nm³/h Actual operation 2083Nm³/h

Inlet pressure 0.4MPa , outlet 4.1MPa

● Purification unit

Design flow rate 2083Nm³/h Actual operation 2046Nm³/h

Inlet pressure 4.03MPa , outlet 3.92MPa

● Cold box

Flow rate 2046Nm³/h Actual operation 2046Nm³/h

Inlet pressure 3.89 MPa , outlet 0.3MPa

● Output : Standard LNG -157°C

● Technology : MRC



Raw material gas filtration, metering, pressure regulation Unit



Dehydration and mercury removal Unit



Mixed refrigerant compressor Unit

Major Unit of Mini-LNG plant (Skid-mounted, Modular design)



Cold box unit



Desulfurization Unit



Dust filter Unit



Recycling and reuse of refrigerant Unit



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CNG Cylinder for Vehicle

SinoCleansky specializes in providing a comprehensive solution of NGV, covering various products and services. Particularly, SinoCleansky has a strong advantage in providing the essential part of NGV, the high pressure cylinder, which is used to store the compressed natural gas on board the vehicle or as back-up storage as cascade cylinders.

- Type I CNG steel cylinder for vehicle
- Type II CNG composite cylinder for vehicle (steel liner hoop-wrapped with glass fiber)
- Type III CNG composite cylinder for vehicle (aluminum liner fully-wrapped with carbon fiber)
- CNG storage cylinder for cascade, both type I and type II and type III

SinoCleansky CNG cylinders are manufactured as per different international standards, principally ISO11439, ISO11119, NZS5454, ECE R110, NGV2-2000, DOT and etc. Our productions have been certified by the international third-party authorities including LRS, BV, SGS etc.

Type I CNG steel cylinder

Manufacturing standard: ISO11439, NZS5454, ECE R110
 OD: 232mm, 273mm, 279mm, 325mm, 356mm, 406mm, etc
 WC: 20L---225L
 WP: 20MPa

● Typical types

Standard	Type
ISO11439/ECER110	OD232-20L-20MPa
ISO11439/ECER110	OD232-22L-20MPa
ISO11439/ECER110	OD232-28L-20MPa
ISO11439/ECER110	OD325-55L-20MPa
ISO11439/ECER110	OD325-60L-20MPa
ISO11439/ECER110	OD356-60L-20MPa
ISO11439/ECER110	OD356-75L-20MPa
ISO11439/ECER110	OD406-100L-20MPa
ISO11439/ECER110	OD356-145L-20MPa
ISO11439/ECER110	OD356-150L-20MPa
NZS5454	NZ232-22L-20MPa
NZS5454	NZ273-50L-20MPa
NZS5454	NZ325-55L-20MPa
NZS5454	NZ325-60L-20MPa





Type II CNG composite cylinder

Manufacturing standard: ISO11439, ECE R110

OD: 325mm, 356mm, 406mm, etc

WC: 50L-200L

WP: 20MPa

Typical types

Standard	Type
ISO11439/ECER110	CRP325-55L-20MPa
ISO11439/ECER110	CRP325-60L-20MPa
ISO11439/ECER110	CRP356-65L-20MPa
ISO11439/ECER110	CRP356-75L-20MPa
ISO11439/ECER110	CRP406-100L-20MPa
ISO11439/ECER110	CRP356-145L-20MPa



Type III CNG composite cylinder

Manufacturing standard: NGV2, ISO11119

OD: 373mm, 383mm etc

WC: 80L-207L

WP: 25MPa

Typical types

Standard	Type
NGV2	CRP373-80L-3600Psi
NGV2	CRP383-200L-3600Psi



CNG storage cylinder for cascade

OD: 229mm, 356mm, 406mm, etc

WC: 50L-200L

WP: 25MPa

Shipment





Cryogenic Pump

Reciprocating Pump

- ⑥ **Industrial gas pumps** are mainly used for air separation products: filling of liquid oxygen, liquid nitrogen, liquid argon, liquid carbon dioxide, air supply systems. The units are mainly single row, double row, and three-row reciprocating pumps. Its flow is 30-5000L/H and its maximum exit pressure is 35.0MPa. An electromagnetic adjustable speed motor, or a fixed rotating speed motor, or a variable frequency and variable speed motor, or an explosion proof motor or an explosion proof variable frequency motor can be equipped as per actual requirements.
- ⑥ **Carbon dioxide pumps** are mainly used for liquid carbon dioxide. Filling of carbon dioxide liquid cylinder. Air supply, air distribution system.
- ⑥ **Large flow and medium pressure piston pumps** are mainly used for liquid oxygen, liquid nitrogen, liquid argon and liquefied natural gas. Air supply systems at large and medium steel mills. Filling of Dewar bottles. Filling of storage tanks.



Centrifugal Pump

- ⑥ **Cryogenic centrifugal pumps** are mainly used for the filling and transport of storage tanks with cryogenic liquids such as liquid oxygen, liquid nitrogen, liquid argon and cooling liquid; the mainly single stage, single suction and direct-connected centrifugal pumps.
- ⑥ **Multi-phase cryogenic centrifugal pumps** are used to deliver and transfer LOX, LIN, LAr, LNG, or other cryogenic liquids in high pressure; in addition, it's available for water, oil, and other chemical liquids. This units is a multi-phase, cascade-structured centrifugal pump. According to the performance of its seals, it can be classified as submerged pump and seal pump.



Submerged pump, seal pump

Shipment





Vaporizer (for IG & LNG)

Ambient Vaporizer

Applicability

They are mainly used for heating, vaporizing LOX, LIN, LAr, LCO₂, LC₂H₄, LNH₃, LPG, LC₃H₈ and other cryogenic mediums.

Performance features

- It's a star-shape fined tube type air temperature vaporizer and it has a stable structure.
- The special rust-proof aluminum alloy has good heat exchange effect, light weight, and anti-corrosion features; in addition, its service life is no less than 20 years.
- The pumps are cleaned and manufactured strictly as per oxygen standards.
- The air outlet temperature is less than 10°C lower than environment temperature (operated continuously for 8 hours)

Main technical parameters

- Suitable medium: LOX, LIN, LCO₂, LNG, LC₂H₄, LPG etc.
- Single set flow: 50-10000Nm³/H
- Working pressure: 0.8-35.0MPa
- Standard: GB, ASME, PED(CE), CCS, CNNC, CASC



Shipment



Water Bath Vaporizer

Applicability

They are mainly used for heating, vaporizing LOX, LIN, LAr, LNG, LCO₂, LC₂H₄, LNH₃, LPG, LC₃H₈ and other cryogenic mediums.

Main technical parameters

- Suitable medium: LOX, LIN, LCO₂, LNG, LC₂H₄, LPG etc.
- Single set flow: 50-10000Nm³/H
- Working pressure: 0.8-35.0MPa
- Standard: GB, ASME, PED(CE), CCS, CNNC, CASC

Electric heated vaporizer

Applicability

This series carburetors heat up the water in the tunnel body by tailor-made high efficiency electric heating equipment, and then heat up the cryogenic liquor (LOX, LIN, LAr, LCO₂, LNG, LC₂H₄, LPG) in the compact heat exchanger. It adopts the advanced water temperature control systems, and the gasification volume is very stable. The outlet temperature shall be room-temperature or customized.

Main technical parameters

- Suitable medium: LOX, LIN, LCO₂, LNG, LC₂H₄, LPG etc.
- Working pressure: 0.8-40.0MPa
- Capacity: 50-20,000Nm³/H
- Standard: GB, ASME, PED(CE), CCS, CNNC, CASC



SinoCleansky

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