

# Huate Gas Presentation

## Huate Gas: China Leading Gas Company

**Safety first**

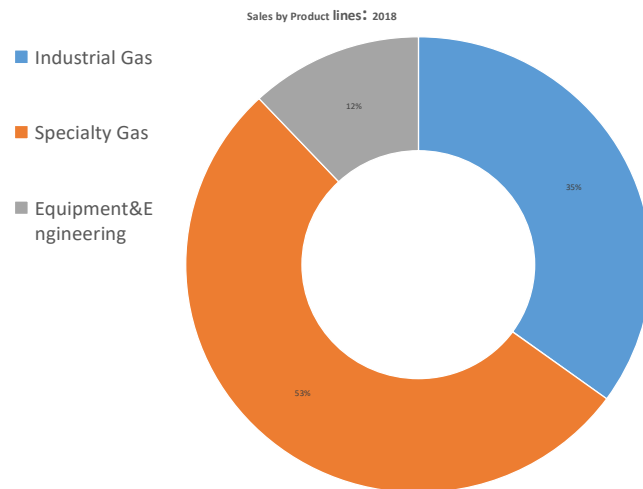
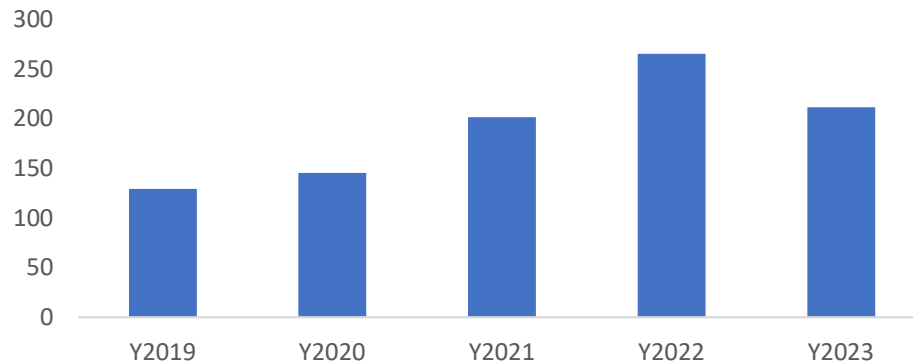
Around  
200 Million  
USD sales



1. Listed in the Science & Technology Innovation Board (Stock code: 688268)
2. Over 30 years, since 1993
3. Chairman: Mr. Shi Pingxiang
4. Started from Package gas biz
5. Around 200 million sales/yr
6. 26 affiliates in China
7. 1186 employees\* (Y2023)
8. 4000+ customers
9. 4 Million cylinders/yr delivered
10. Business in 30+ provinces in China and 50+ countries & Regions worldwide

In million USD

Huate Revenue FY2019-2023



**1. Steady growth in the past  
4 years**

**2. Business focus on  
electronic gases (~80% of  
specialty gas), over 150 gas  
materials**

**3. Solid financial status**



Comprehensive Emergency response systems in place





■ SPC 6 $\sigma$   
management



■ SQC Statistics  
and Analysis



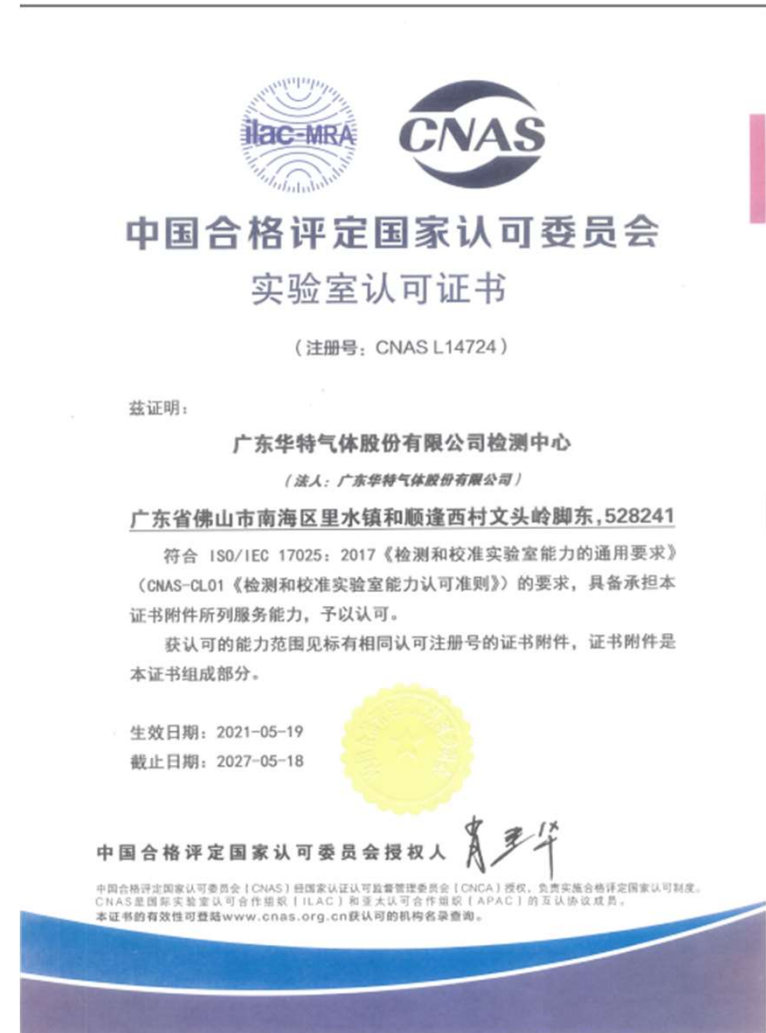
■ State-of-  
the-art  
Instruments



■ Professional  
Quality  
Control team

On May 19, 2021, the testing center of our company has been reviewed of laboratory accreditation organized by China National Accreditation Commission for conformity assessment (hereinafter referred to as "CNAs") and obtained CNAs laboratory accreditation certificate. The scope of accreditation covers 18 gases of our products or gases for electronic industry.

Lab Test Equipment	Quantity
Trace oxygen analyzer	8
Trace water analyzer	11
Particle Counter	2
GC	35
ICP-MS	1
FTIR	1



## Closer to the markets



1. 8 gas filling plants in China
2. 10 depots to supply 30 provinces China
3. 100+ people of Sales force in South, East, North, Middle and West China
4. 200+ people of package gas supply chain management and service team
5. Serving 4000+ customers of 20 industries crossing China
6. There will be more filling plants...

20 industries of market

4000+ customers

Semiconductor  
Gas distributor  
Solar  
Fiber optical  
TFT  
FPD  
Electronic components  
Glass  
Chemical  
Metal process  
Institutes/laboratories  
Chip  
Light  
Instruments  
Medical apparatus  
Oil/gas  
Others  
Communications equipment & accessories  
Mechanical equipment  
Laser equipment  
Surface treatment  
Medical institutions  
Refrigeration accessories & refrigerants  
Food  
Print  
Environmental protection equipment  
Analyzer  
Pharmaceutical engineering  
Security equipment  
Home&Kitchen products  
Furniture accessories  
Generator  
Mucilage glue

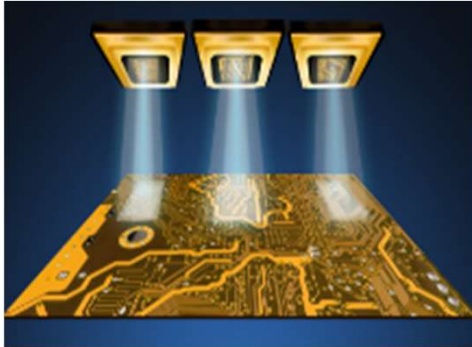
## Distribution value-added





Category	Series	Products
Specialty Gas	Fluoride	CF <sub>4</sub> 、 C <sub>2</sub> F <sub>6</sub> 、 CHF <sub>3</sub> 、 CH <sub>3</sub> F、 CH <sub>2</sub> F <sub>2</sub> 、 SF <sub>6</sub> 、 C <sub>4</sub> F <sub>6</sub> 、 C <sub>4</sub> F <sub>8</sub> 、 C <sub>3</sub> F <sub>8</sub>
	Hydride	SiH <sub>4</sub> 、 PH <sub>3</sub> 、 AsH <sub>3</sub> 、 GeH <sub>4</sub> 、 UHP NH <sub>3</sub> 、 H <sub>2</sub> Se、 B <sub>2</sub> H <sub>6</sub> 、 H <sub>2</sub>
	Rare gas & rare gas mixtures	Kr、 Ne、 Xe、 He
	Oxide & mixtures	CO, NO, C <sub>2</sub> H <sub>4</sub> O、 CO <sub>2</sub> 、
	UHP Hydrocarbons & mixtures	CH <sub>4</sub> 、 C <sub>2</sub> H <sub>6</sub> 、 C <sub>2</sub> H <sub>2</sub> 、 C <sub>2</sub> H <sub>4</sub> 、 C <sub>3</sub> H <sub>8</sub> 、 C <sub>4</sub> H <sub>10</sub>
Industrial Gas	O <sub>2</sub> , N <sub>2</sub> , Ar, C <sub>3</sub> H <sub>8</sub> , CO <sub>2</sub> , N <sub>2</sub> O..	O <sub>2</sub> 、 N <sub>2</sub> 、 Ar、 NH <sub>3</sub> 、 C <sub>3</sub> H <sub>8</sub> 、 CO <sub>2</sub> 、 N <sub>2</sub> O
Engineering & Equipment	Dewar, Aluminum cylinders, engineering project	Cryogenic gas cylinder、 Pipeline project
On-site gas production	On-site gas production	On-site Oxygen, Nitrogen and Hydrogen production, ASU
Chemicals & Precursors	Bulk chemicals	H <sub>2</sub> SO <sub>4</sub> , H <sub>3</sub> PO <sub>4</sub> , H <sub>2</sub> O <sub>2</sub> , IPA, HF, HNO <sub>3</sub> , HCl, NH <sub>4</sub> OH etc.
	Precursors	HCDS, TSA, TDMAT, TEOS etc.
Home Gas	N <sub>2</sub> O, CO <sub>2</sub> , He	N <sub>2</sub> O/CO <sub>2</sub> cartridge, Disposable helium
International Business	International Business	Trading, Investment, M&A, etc.

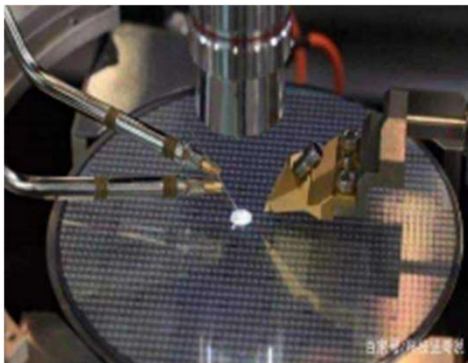
## PHOTO



The Lithography Gas was self-developed by Huate Gas, achieved **ASML Cymer certification in 2016**, Gigaphoton certification in 2021

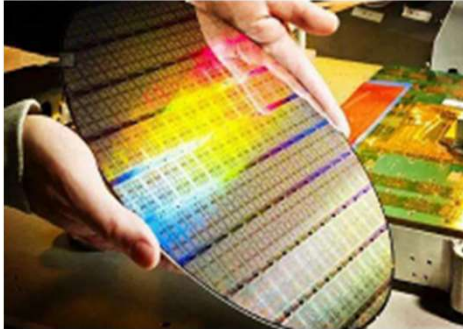
$F_2/Kr/Ne$ 、 $Kr/Ne$ 、 $Ar/Xe/Ne$ 、 $F_2/Ar/Ne$ 、 $1.2\%He+N_2$ 、 $0.5\%O_2+He$

## ETCH



Our UHP fluorocarbons are widely used in 8-12 inch semiconductor fabs, some products have been supplied to 14nm process.

$CF_4$ 、 $C_2F_6$ 、 $C_4F_6$ 、 $C_3F_8$ 、 $C_4F_8$ 、 $CH_3F$ 、 $CH_2F_2$ 、 $CHF_3$ 、 $CO$ 、 $C_5F_8$

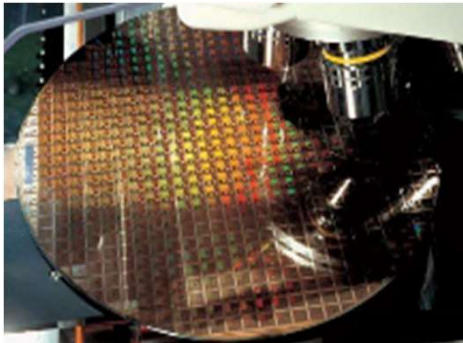


## CLEAN

Electronic grade CO<sub>2</sub>, C<sub>4</sub>F<sub>8</sub>, C<sub>2</sub>F<sub>6</sub> has been widely used in domestic and international market. Our 6N UHP He, N<sub>2</sub>, Ar has been supplied to end users.

CO<sub>2</sub>、C<sub>4</sub>F<sub>8</sub>、He、NF<sub>3</sub>、C<sub>2</sub>F<sub>6</sub>、N<sub>2</sub>、ClF<sub>3</sub>、COS

## CVD/DIFF



Huate owns the knowhow of electronic gas mix, and develops gases like H<sub>2</sub>Se, GeH<sub>4</sub> and NH<sub>3</sub>, **GeH<sub>4</sub> has been supplied to Samsung and Hynix.** UHP Ammonia has been delivered to TSMC and precursors are under layout

GeH<sub>4</sub>、H<sub>2</sub>Se、Si<sub>2</sub>H<sub>6</sub>、NH<sub>3</sub>、GeH<sub>4</sub>+MG、NO、PH<sub>3</sub>+MG、SiH<sub>4</sub>+MG、Precursors



Propane,  
Butane,

LAR, LIN, LOX, LCO2, C2H4, N2O



SO<sub>2</sub>,  
NH<sub>3</sub>, EO

C<sub>2</sub>H<sub>2</sub>



## CRYOGENIC & GAS EQUIPMENT

Focus on gas R&D and application

To become a leader in gas industry





## Acid/Base

- H<sub>2</sub>SO<sub>4</sub> 96%
- NH<sub>4</sub>OH 29%
- H<sub>2</sub>O<sub>2</sub> 31%
- HF 49%
- H<sub>3</sub>PO<sub>4</sub> 85%
- HNO<sub>3</sub> 70%
- HoAC 100%
- KOH 45%
- HCl 37%
- TMAH 25%
- CAN

## Mixed solution

- Cu-Etch
- Ti-Etch
- Ag-Etch
- BOE/SIO/DHF
- Al-Etch
- Poly-Etch
- ITO Etch
- Cr Etch
- EC-Clean Cu CMP
- TMAH 2.38%

## Solvent

- IPA
- Acetone
- Methanol
- NMP
- EG
- PGME
- PGMEA
- DMSO
- MEA
- HMDS



ISO Tank



DRUM 200L



IBC 1000L



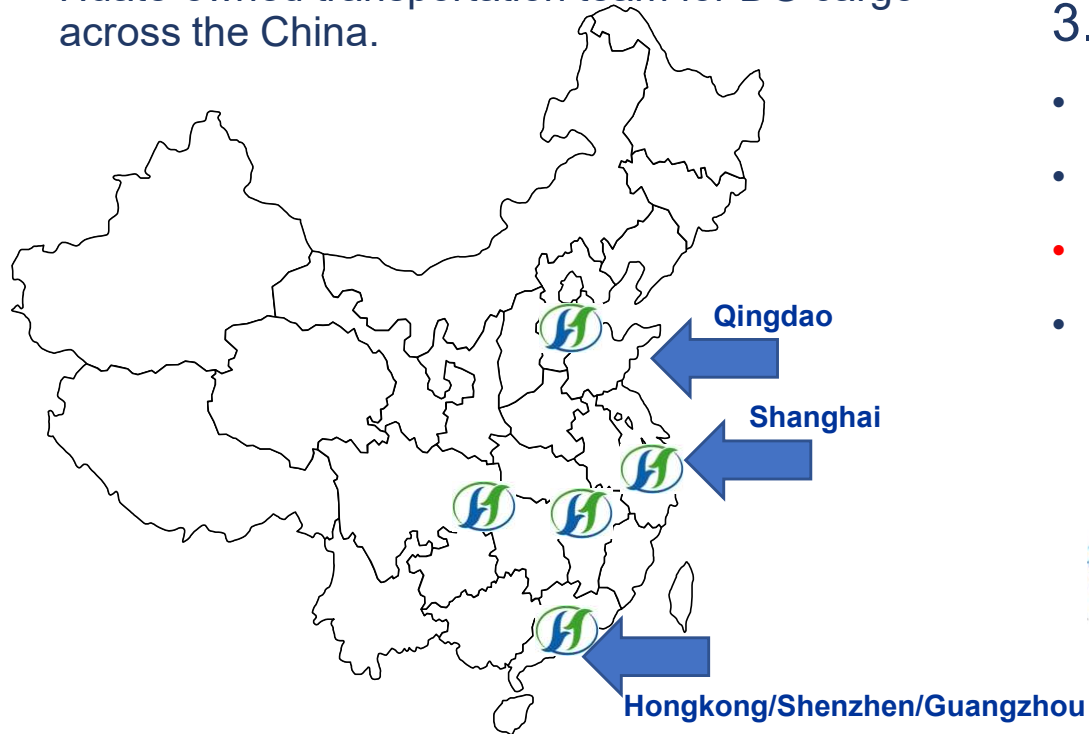




# Experience in logistics

## 1. Domestic:

- Proven record of the domestic supply chain and deliveries, from 5 supply centers.
- Huate-owned transportation team for DG cargo across the China.



## 2. Import/Export:

- Import/Export >100 dry containers every month
- Through Hongkong/Shenzhen/Shanghai/Qingdao

## 3. International:

- Supply to >50 countries
- Over 20 years experience
- **AEO(Authorized Economic Operator) certified**
- One Hongkong affiliate(APG) to arrange the air delivery for DG cargo





Reliability

Current main plant in Jiangxi and Foshan



Capacity

**Fully licensed operating capacity.**



Experience

Excellent expertise in electronic gas know-how with >10 years experience.



Process &  
Quality Control

Robust control under complicated and systemic procedures.  
Capability of Ship-to-Control requirement.



Container  
Treatment

Huate internal surface treatment & passivation to improve roughness and particle performance.



Lab Certification

Huate Lab expertise to commit and full analysis



Technical Support

Emergency support

*Thanks & Questions Please*