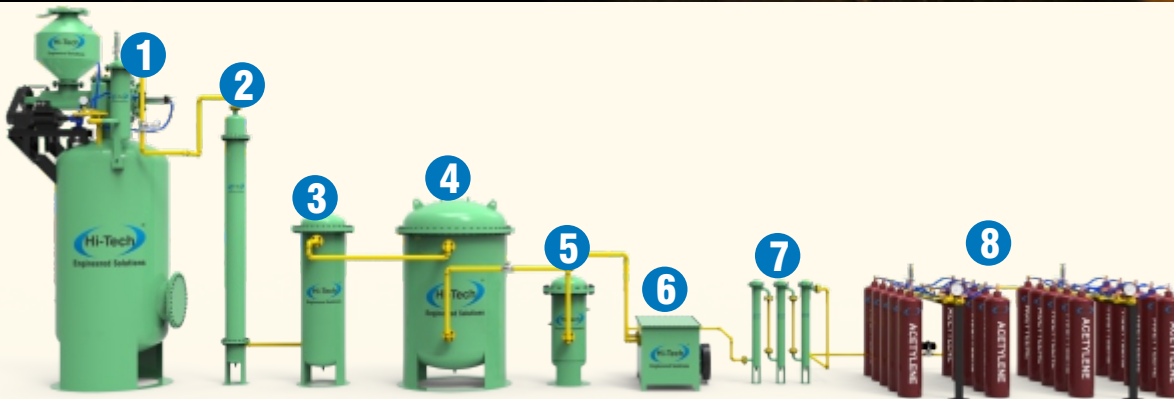


# SMALL CAPACITY ACETYLENE PRODUCTION



Acetylene	Info
Molar Mass	26.04 g/mol
Density	1.10 kg/dm <sup>3</sup>
Covalent Radius	63 pm
Number of Electrons	10
Vapor Pressure	1.15 mbar
Melting Point	192.35 K
Boiling Point	189.15 K

**Economical Acetylene Production Technology  
for Max. Yield, Safer & Automatic Operation.**



Typical Process Flow Diagram for Acetylene Cylinder Filling

### Nomenclature

- 1 Acetylene Generator
- 2 Cooler Condenser
- 3 Low Pressure Drier
- 4 Acetylene Purifier
- 5 Ammonia Scrubber
- 6 Acetylene Compressor
- 7 H.P. Driers & Filters
- 8 Cylinder Filling Ramp

**LOWER YOUR FACILITY'S OPERATING COST**  
take Acetylene directly from Calcium Carbide

Eliminate the Expense of Purchasing, Receiving & Monitoring your Acetylene Cylinders Supply's. Hi-Tech Engineered Solutions Designs, Builds & commissions Turn-Key based Acetylene cylinder Filling Plants/Systems Worldwide. The Systems offered are Fully Automatic touch screen control, Easy to maintain and produces an High Quality Acetylene suitable for Fabrication & Speciality Gas Applications. Hi-Tech's Acetylene Cylinder Filling Systems are Intrinsically Safe, Efficient and having higher carbide yields.

Join the growing number of customers that have ended their expensive reliance on delivered Gas.

**THE PROCESS**  
for Acetylene Cylinder Filling

The reaction of Calcium Carbide / Chloride with Water produces Acetylene, Calcium Hydroxide, as the reaction is instantaneous Acetylene is immediately produced, Acetylene is pre-cooled with help of cooler condenser, excess moisture is removed with help of Low Pressure Drier, Dry Acetylene thus produced is passed through Purifier (filled with specially selected regenerative type mass) for further gas purification. The Ammonia scrubber is provided for removal of ammonia gas, Acetylene is finally compressed to working pressure with help of a Acetylene compressor, filtered and Dried with Acetylene filter & driers and finally filled to Acetylene Cylinders.

## PLANT UNIQUE FEATURES

- ✓ Completely Pre-Piped & Skid Mounted.
- ✓ Containerized Shipments right from factory.
- ✓ Critical process parameters monitored and recorded every 500 milliseconds.
- ✓ Automatic shutdown for in case of high Temperature, High Pressure, High Water Level etc.
- ✓ Designed in accordance with local standards.
- ✓ Automatic and unattended operation.
- ✓ On-site start-up Training and assistance by Hi-Tech's Engineered Solutions technicians anywhere in the World.



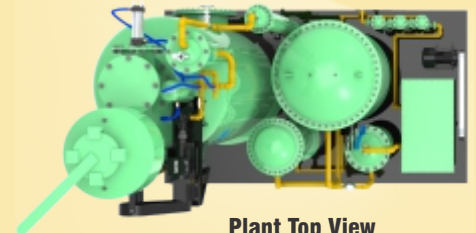
Touchscreen Interface

Small Capacity Acetylene Cylinder Filling Plant

## THE ADVANTAGES

Hi-Tech's Acetylene Plants Can be operated and maintained without extensive technical knowledge or training. our easy to follow manuals, drawings, videos and on-site training will enable your staff to properly calibrate and maintain the whole system. Routine maintenance is limited to normal compressor up-keep and periodic cleaning and replacement of filter elements only.

- 1 **Modern**- Plant is designed with standard Safety Practice from NFPA, CSB, FDA etc.
- 2 **Economical**- Higher Acetylene Gas Yields with small plant foot-print and lower initial costs.
- 3 **Compact**- The Plant does't required any bulky gas holder system & consumes very less space.
- 4 **Efficient**- Compact design with PLC Operation controls all plant parameters.
- 5 **Easy Installation**- The Plant arrives on pre-piped skids for minimum on-site assembly & installation.
- 6 **Safe**- The Plant operation and critical points like Level, Temperature & Pressure is controlled by an intelligent industrial grade PLC, Hence provides an un-equalled protection to acetylene filling plants.



Plant Top View

### The Scope of Supply

- Acetylene Generator
- Cooler Condenser
- Low Pressure Drier
- Acetylene Purifier
- Ammonia Scrubber
- Acetylene Compressor
- Filling Hopper
- Air Operated Hoist
- Air Compressor
- Purifier Scrubber
- High Pressure Drier
- High Pressure Filter
- Flame Arrester
- Back pressure Relief Valve
- Pneumatic Acetone Pump
- Scale for Weighing Cylinders
- Weatherproof PLC Panel with Touchscreen
- Drain Back Manifold
- Interconnecting air, gas and water lines set
- 2 sets of Charging Manifolds with Flame Arresters, Check Valves



The Acetylene Generator Assembly

### Hi-Tech Engineered Solutions Equipment- Operating in over 50 Countries



With our Worldwide base of installed equipment, Hi-Tech Engineered Solutions has the engineering and manufacturing experience to integrate successfully into Plants for Ozone, Oxygen, Nitrogen, Argon, Acetylene, Nitrous Oxide & Carbon di-oxide. Our sales and service Network is dedicated to keeping your Acetylene Cylinder filling plants / generator in top notch condition through out year.

### A Full Line of Small Capacity Acetylene Generators Available

Our Generators Provides from 2 to 20 kg per hour of Acetylene. Use the following Table to determine which model is most suitable to your application.

Model	HTA-T 2	HTA-T-5	HTA-T-10	HTA-T-15	HTA-T-20
<b>Specifications</b>					
<b>Capacity</b>	2 Kg/Hr	5 Kg/Hr	10 Kg/Hr	15 Kg/Hr	20 Kg/Hr
<b>Operating Pressure</b>	0.5 Bars G	0.5 Bars G	0.5 Bars G	0.5 Bars G	0.5 Bars G
<b>Purity*</b>	99.6% V/V	99.6% V/V	99.6% V/V	99.6% V/V	99.6% V/V
<b>Startup Time</b>	5 Minutes	5 Minutes	5 Minutes	5 Minutes	5 Minutes
<b>Carbide Size</b>	0-7 mm	7-15 mm	7-15mm	15-25mm	15-25 mm
<b>Cylinders Filled per Batch**</b>	3	6	12	18	24
<b>Connected Power</b>	3 KW	5 KW	8 KW	12 KW	16 KW

\*using USA/UK grade Calcium carbide having Max 15% Dust Concentration; \*\* A batch is of 8 Hours and Cylinders having 7 kg acetylene capacity.

Note- Custom built models also available, Specifications are subject to change without prior notice.

#### WORLDWIDE LOCATION

Hi-Tech Gas Equipment & Hardware  
262 KM Stone, National Highway-1,  
Mandi Gobindgarh-147 301, Punjab  
India

☎ +91-1765-500999

☎ +1-302-996-5818

🌐 www.hitechgas.com

✉ sales@hitechgas.com

#### NORTH AMERICA LOCATION

Hi-Tech North America LLC  
1408, Old Capital Trail, # 554  
Wilmington, DE- 19808  
United States of America

☎ +1-302-298-1374

☎ +1-302-996-5818

🌐 www.hitechgas.us

✉ sales@hitechgas.us

#### YOUR LOCAL CONTACT

