



# STEELMAN GASES PVT.LTD



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## **OUR HISTORY**

We are group of two companies namely Steelman Gases Pvt. Ltd. & Steelman Oxygen and introduce selves to you as one of the leading manufactures & suppliers of Oxygen, Medical Oxygen, anhydrous Ammonia & Liquor Ammonia, CO<sub>2</sub>, and Argon. Also we are having the large range of all types of industrial gases. Viz., Acetylene, Zero Air, Nitrous Oxide, Mixture Gases, Liquid chlorine, E.T.O Gas, Hydrogen and Nitrogen, Helium, Refrigerant Gases etc.

We are glad to say that we are having our own refilling plant at Sekhpar-Surendranagar and GIDC Wadhwan. Large dealer network in the area of Saurashtra and Gujarat, with our Depot at Rajkot, morbi and Veraval.

Moreover, we are also providing services such as Central Line Gas System for hospitals, laboratories. Gas Purification System, Manifold and Chlorinator Plant for Bacteria free water & Gas Equipments.

The pioneers of the company Mr. Javahar Vora & Mr. Nilesh Pancholi have a wide experience and technical knowledge in the field of Gases since last 24 years. Company started operation since 1994. The success of the group has been the result of the choice attention to Quality, after sales Service & down to earth prices.



# *WHY TO CHOOSE US ?*

- GUARANTEE OF QUALITY AND ON TIME SUPPLY.
- PROACTIVE DISTRIBUTION.
- STRICTLY FOLLOWING THE RULES & REGULATION FRANKED BY DEPERTMENT OF SAFETY.
- PROVIDING THE LARGE RANGE OF PRODUCTS.
- PROPOSED SOLUTIONS FOR CUSTOMER.
- BULK SUPPLY (TANKER LOAD).
- PROVIDE TEST CERTIFICATE .
- GAS HANDLING & DISTRIBUTION SYSTEM.
- GAS PIPELINE & MANIFOLD SYSTEM.
- MAINTENANCES OF THE SYSTEM.
- DAILY STOCK MONITORING THROUGH CENTRALIZED LOGISTICS TEAM.
- ON TIME SUPPLY.



## ARGON GAS AND ITS APPLICATION IN INDUSTRIES

Argon belongs to the family of inert and rare gases of the atmosphere. It is plentiful compared to the other rare atmospheric gases; 1 million ft<sup>3</sup> (28 300 m<sup>3</sup>) of dry air contains 9340 ft<sup>3</sup> (264 m<sup>3</sup>) of argon. Argon is colorless, odorless, tasteless and nontoxic. It is extremely inert and forms no known chemical compounds. It is slightly soluble in water. Argon is manufactured in air separation plants by means of fractional distillation after the liquefaction of air.

All of the major applications of Argon are related to the production, processing and fabrication of metals. The role of Argon is nearly always to exclude atmospheric air from contact with metal alloys. An example of this is as a purging gas to protect weld areas, such as the inside of pipes during welding.

The predominant gas used in shielding gases because it forms a very good shield due to the high density and total inertness.

Used on a wide range of ferrous and non-ferrous materials for welding and cutting.

Shielding gas for MIG and TIG welding processes and for plasma-cutting. Argon is used alone or mixed with other gases such as Helium, Carbon Dioxide, Oxygen, Nitrogen or Hydrogen. Each mixture is often specific to welding a particular material or to a particular process. For example, Argon is used as a shielding gas for TIG-welding aluminium, titanium and copper.

When MIG-welding ferrous materials, pure Argon is not an ideal shielding gas, as it produces an arc with poor cathodic rooting characteristics, large droplet size and therefore higher levels of spatter. For this reason, BOC recommends that Argoshield or Stainshield gases be used depending on the thickness and type of material being welded.

Fills the inter-space in double-glazed windows.



## APPLICATION FOR INDUSTRIAL OXYGEN

Widely used with a fuel gas for cutting, welding, brazing and soldering. The use of Oxygen gives higher flame temperatures than if air is used.

In oxy-cutting, an oxy-fuel flame preheats the steel to its ignition temperature. A jet of gaseous Oxygen flows onto the red-hot steel, generating more heat and melting the steel. The steel in contact with the Oxygen jet is oxidised, creating metallic slag which is blown from the cut, allowing more steel to react with the Oxygen.

In plasma and laser-cutting steel, an arc or laser beam is used to heat the steel to its ignition temperature. Oxygen is then used in the same way as with Oxygen-cutting to create an exothermic reaction and to blow away any metal oxide or slag.

Thermal lancing Oxygen is used in conjunction with the steel lance to create a high-temperature melting process capable of drilling or cutting through materials such as concrete, brick, stone and most metals.

High-purity Oxygen is used in the laboratories, process-control operations, metal analysis instruments and in semi-conductor production. Used as an assist gas in lasers for cutting mild





## APPLICATION OF NITROGEN GAS IN INDUSTRY

Shielding or assist gas for plasma-cutting aluminium and stainless steel, and as an assist gas for laser-cutting stainless steel TIG-welding of tough-pitch copper

Widely used for reasons of safety and the prevention of product degradation in the chemicals and petroleum industry

Inserting reactors and storage tanks

Purging vessels and pipelines, Sparging, Pressure-transfer of liquids

Heat-treatment processes to protect some of the most reactive metals.

In electrochemical analysis, can be bubbled through to displace any Oxygen.

Pressure-transfer, where the movement of liquids or slurries from one piece of process plant to another is effected using gas pressure.

Tyre inflation: helps to extend tyre life and prevent tyre bursts.

Pressurising accumulators for batch-testing applications.

Can be used for shrink-fitting: the intense cold of liquid Nitrogen ( $-196^{\circ}\text{C}$ ), reduces the physical dimensions of a component placed in the liquid. Once cooled, the component is connected to a mating component before swelling to its original size as it reaches room temperature, thereby securing itself in place.



## Application of Carbon dioxide

Carbon dioxide ( $\text{CO}_2$ ) is used as a key cryogenic agent in cooling, chilling and freezing applications protecting the taste and texture of your food products by maintaining proper temperature control.  $\text{CO}_2$  also reduces the need for preservatives in packaged products, and is an essential ingredient in carbonated beverages. Solvent: Liquid  $\text{CO}_2$  is considered as a good dissolving agent for many organic compounds. Here it can be used to remove caffeine from coffee. Fumigation: Used as a fumigant to increase shelf life and remove infestations. Fire Extinguishers:  $\text{CO}_2$  extinguishes fires.

**Welding & Metal Fabrication** Carbon dioxide is most often mixed with argon as a shielding gas used to prevent atmospheric contamination of molten metal in electric arc welding processes.  **$\text{CO}_2$  Laser:** The  $\text{CO}_2$  laser, a common type of industrial gas laser uses  $\text{CO}_2$  as a medium. **Welding:** It also find its use as an atmosphere for welding. **Pressured Gas:** It is used as the cheapest noncombustible pressurized gas. **Pressured  $\text{CO}_2$**  are inside tins in life jackets. **Compressed  $\text{CO}_2$**  gas is used in paintball markers, airguns, for ballooning bicycle tires. **Plants:** Plants require  $\text{CO}_2$  to execute photosynthesis, and greenhouses can promote plant growth with additional  $\text{CO}_2$ .

**Healthcare** Healthcare Carbon dioxide USP is used for insufflation and is often combined with oxygen or air as a respiratory stimulant to promote deep breathing. **Water & Wastewater Treatment** A safe alternative to mineral acids, carbon dioxide replaces chemicals used in pH reduction lowering costs and improving plant safety and flexibility.





**Ammonia solution**, also known as **ammonia water**, **ammonical liquor**, **ammonia liquor**, **aqua ammonia**, **aqueous ammonia**, or (inaccurately) **ammonia**, is a solution of [ammonia](#) in water. It can be denoted by the symbols  $\text{NH}_3(\text{aq})$ . It is sometimes thought of as a solution of **ammonium hydroxide**. Although the name ammonium hydroxide suggests an alkali with [composition](#)  $[\text{NH}_4^+][\text{OH}^-]$ , it is actually impossible to isolate samples of  $\text{NH}_4\text{OH}$ . The ions  $\text{NH}_4^+$  and  $\text{OH}^-$  do not account for a significant fraction of the total amount of ammonia except in extremely dilute solutions.<sup>[4]</sup>

### **Aqueous Ammonia (Liquor Ammonia)**

Ammonia in Water, commonly known as Aqua Ammonia renders it safe to handle and helps avoid the hazards that accompany use of Ammonia Gas by greatly reducing its vapour pressure. Also known as Ammoniacal Liquor, it is an inorganic chemical used as a liquid chemical in various industries like Rubber, Pharmaceuticals among others. Sometimes called Ammonium Hydroxide, the chemical formula is  $\text{NH}_4\text{OH}$  with UN No. 2672 and CAS registry is 1336-21-6. Commonly manufactured with a concentration of about 25% w/w, Ammonia Solution is supplied in varying Packaging capacities ranging from 5 Lt. To 235 Lt. HMHDPE Plastic containers, 6 MT to 15 MT Tankers and 22 MT ISO Tankers.



# Aqueous Ammonia (Liquid Ammonia) - Specifications

## Aqueous Ammonia Solution (Ammonium Hydroxide)

Description	A Clear Colorless Liquid Odor Strongly Pungent & Characteristic
Solubility	Mixable with water in all Proportions
Identifications	I.P. Identification test for ammonia positive
Residue On Evaporation	0.0068 %
Specific Gravity @ 25 c	0.905 gms
Chloride (AS CL)	Less than 0.0005 %
Sulphate (AS SO <sub>4</sub> )	Less than 0.0002 %
Iron (AS Fe)	Less than 0.00002 %
Carbonate (AS CO <sub>3</sub> )	Less than 0.002 %
Assay	Contents of Ammonia i.e NH <sub>3</sub> = 25 % @ 27 C Contents of Water 75 %





# Anhydrous Ammonia

Purity	99.5 %
Oil (Max)	0.02 %
Moisture (Max)	0.5 %
Residue On Evaporation % By Valume	0.05 %
Pyridine	Nil
Napthanlene	Nil
Phosphic	Passes Test
Sulphur Compounds	Passes Test





# TRANSPORT EMERGENCY CARD( ROAD )

## AMMONIA SOLUTION

**SYNONYMS:** Aqua Ammonia, Aqueous Ammonia, Liquor Ammonia, Liqueur Ammonia, Ammoniacal Liquor, Ammonia Water and Ammonia Solution

**AMMONIA SOLUTION:** Quickly, on disturbance releases Ammonia Gas which has a pungent odour, is an irritant, and corrosive to skin, eye, respiratory tract and mucous membranes.

**Nature of Hazards:** Heating will cause pressure rise, severe risk of bursting and explosion. The vapor and mist has strongly irritating effects on eyes, skin and respiratory tract. The liquid causes severe burns to the body parts on extended contact. Spilled liquid quickly evaporates and spreads in atmosphere.

**Protective Devices:** Use Ammonia canister Mask or Self Contained Breathing Apparatus (SCBA) for respiratory protection or suitable respiratory protective devices, goggles giving complete protection to eyes, PVC or rubber gloves, boots, suits and hood for complete protection of body and Eye-wash bottle containing clean water.

**Emergency Action:** If possible move vehicle to open ground. Stop the engine. Mark roads and warn other road users. Keep public away from danger area. Keep the persons up-wind if possible or do not face the wind coming in from the direction of leak or spillage. Put on protective devices.

**Spillage:** If vapors drift towards populated area, warn inhabitants. Contain leaking liquid with sand or earth. If this is not practicable, use water spray to knock down the vapour.

**Fire:** Keep containers cool by spraying with water if exposed to fire.

**First Aid:** Remove contaminated clothing immediately and wash affected skin with plenty of water. If Ammonia vapours get in to eyes, wash eyes with plenty of water for at least 15 minutes. Seek medical treatment when anyone has symptoms apparently due to inhalation or contact with skin or eyes. Persons who have inhaled the gas must lie down and keep still. Keep patients warm. Do not apply artificial respiration if patient is breathing.

**Additional Information:** Do not mishandle Ammonia Drums/Jerrycans. Protect them from any source of heat as ammonia has a very high vapour pressure which rises rapidly with temperature. Drums/Jerrycans should not be laden above the height of truck body and no part of Drums/Jerrycans should project outside the truck body.

## Our Vision

Be Your Preferred Partner Through Creative Solution. Our Commitment to You  
Enhance Safety. Reduce your total cost Improve efficiencies. The best quality service

# Our Network:

## Company own Depot & Dealer Network

- 1.Rajkot.
- 2.Veraval.
- 3.Halvad.
- 4.Surendranagar.
- 5.Wadhwan (GIDC).
- 6.Amreli

- 7.Dhrangadhra
- 8.Sayla
- 9.Morbi
- 10.Mahuva
- 11.Porbandar
- 12.Ahmedabad
- 13.Anand

Contact us

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