

AXCEL GASES

(AN ISO 9001:2015 Certified Company)

CORPORATE PROFILE



ABILITY TO **X**PLORE & **C**onvert **E**NGINEERING **L**aws

WHO WE ARE ?

Axcel Gases is an ISO 9001:2015 certified & Govt. of India (PESO) approved Manufacturing and Exporter Company situated in the National Capital Region of India called Delhi - NCR. In just 15 years, AXCEL established itself as the true voice of the gases industry, having its own Manufacturing & Testing facilities. Axcel is a one stop solution for all your needs related to Commercial & High Pure Gases, Gas Mixtures, Calibration or Reference Gases, High Pressure Gas Cylinders, Acetylene Cylinders, Cylinder Quads / Cascades, Commercial or Highly Precise Regulators, Valves etc. Apart from this we also perform Hydraulic Testing of Cylinders and execute Pipeline Jobs at customer's site.

The company maintains the production facility which is arguably one of the largest in the Northern Part of India combined together for Argon, Nitrogen, Carbon dioxide, Oxygen, Acetylene, and Mixture & Calibration Gases. Axcel Gases having a proven technology credentials and its own laboratory, Is well equipped to make, test and certify various calibration gas mixtures of high accuracy.



We, Axcel Gases are one of the premier exporters of Calibration Gases, Gas Cylinders & Quads/Cascades and are fully dedicated to the network of our customers in India and abroad, like Africa, America, Europe & Gulf regions.

| OUR MISSION

Axcel aims to be India's best performing, technologically advanced & safest gas company, providing excellent service to all our valuable customers.

With our customers, we have developed long term trustworthy relationships by matching their requirements and providing them technologically advanced and economically feasible solutions as per their expectations.

We also emphasize on economical viability, efficiency, safety, waste management and green and clean environment. We make huge quantities of different gases and let them meet clean air regulations. Axcel Gases have become an integral part of any industrial setup and is providing services to almost all key industrial sectors like Automobile, chemicals & energy, Oil & Gas refineries, Mining & Metallurgy, Research & Development, Food and beverages, glass, electronics and healthcare. We have adopted environmentally and climate friendly production processes and uses energy and resources as efficiently as possible. Axcel technologies also help in cutting emissions and managing wastes. This accelerate the movement to a greater sustainability and increased clean and green environment protection, while adding value to the entire production chain and customer satisfaction.

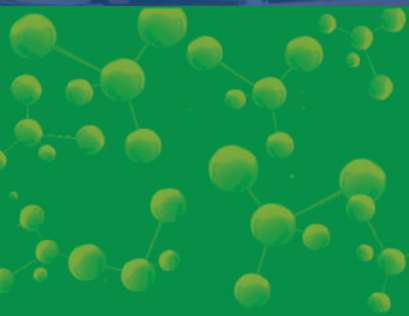




| PURE GASES

We, Axcel Gases take pride to announce that we are duly authorized by CCOE (Chief Controller Of Explosives – A Department of Central Govt. of India) for manufacturing and storage of different Gases. We have the largest production facility in Northern India for Argon, Nitrogen, Carbon dioxide, Oxygen, Acetylene, Zero Air, Mixture & Calibration Gases combined together, all under one roof.

At Axcel Gases, Quality levels are continuously controlled and meet the highest standards with the help of our well-equipped laboratory testing facility. We have in-house highly precise electronic instruments to analyse the purity or various impurities present in a Gas at different levels.



| GAS MIXTURES

Various Industrial & Medical applications need mixture of two or more gases to be mixed in pre specified ratios for the purpose of better economy or product finish. Generally used mixture gases are Argon + Oxygen, Argon + Carbon Di Oxide, Argon + Hydrogen, Nitrogen + Hydrogen, Nitrogen + Helium and many more depending upon its application and process. Post production, these gas mixtures must be duly verified for its quality.

Axcel Gases with its team of highly qualified and experienced professionals are well equipped to provide such gas mixtures and have got all the necessary advanced equipments to make, test & verify the quality of such gas mixtures with high accuracy.



ACETYLENE



ARGON

AAS Grade Acetylene Gas

We are in the business of manufacturing of Acetylene Gas since more than past 18 year and have got vast experience in Production of the same. Being a largest manufacturer of Acetylene gas in Northern Part of India, our State of the art Acetylene Production unit can produce very high purity Acetylene as well. This Axcel Purified High Purity Acetylene Gas find application in **Atomic Absorption Spectroscopy (AAS)**. Purity and Impurity details of AAS Grade Acetylene is as follows.

Grade – N	Purity	Impurities	
		O ₂ +N ₂ +CH ₄ +HC %	PH ₃ +NH ₃
AAS - 2.6 N	99.6%	0.38%	10 VPM

* For Various Other Purity Grades, Please Contact Us.

Spectrometer Grade Argon Gas

Being a manufacturer of Argon Gas, we can also produce High purity Argon Gas used for Laboratory applications or **Spectrometers** in various Industries. The Cylinders used for High Purity gas filling are properly heat treated and vacuum to remove any impurities. There are various grades of Argon Gas available with us. All such grades are checked and meet quality standards before delivering to the customers. Purity and Impurity details of Spectrometer Grade Argon Gas is as follows:

Grade – N	Purity	Maximum Impurities in PPM by Volume					
		O ₂	N ₂	CO ₂	CO	Moisture	THC
Spectrometer - 5.2 N	99.9992 %	1.5	1.5	0.2	0.2	1	0.2

* For Various Other Purity Grades, Please Contact Us.

FIRE SUPPRESSION GASES, 300 BAR REFILLING AND HYDRO TESTING

ArgoNite, Inergen, Nitrogen, Argon & Carbon Di Oxide gases are commonly used in a Fire Suppression System. Some of these are also known by the trade names IG01, IG100, IG55, and IG541. Axcel Gases, a PESO Certified Company, provides services of filling of these Fire Suppression System cylinders at pressures of 300 Bar or higher. Axcel Gases is also PESO Certified to carry out Services of Hydro Testing ArgoNite, Inergen, Nitrogen, Argon & Carbon Di Oxide cylinders at a pressures of up to 700 bar or more.

ArgoNite

Some fire suppression systems make use of ArgoNite which is a mixture of two naturally occurring atmospheric gases. Argonite is also known as IG55. Being a mixture of 2 atmospheric gases, ArgoNite also have nil effect on Global warming, does not depletes the Ozone Layer and is friendly to human life and environment.

Axcel Gases can provide you high quality ArgoNite Gas used in Fire Fighting Flooding systems to completely extinguish the fire. Axcel Gases is well Equipped to Fill Argonite Gas Cylinders upto 300 Bar.

InerGen

Inergen Gas is also denoted as IG 541. Being a manufacturer of various gases, Axcel can also provides another safe, clean and nature friendly fire suppression gas called InerGen. As InerGen is a mixture of 3 naturally occurring atmospheric gases, so it does not rises the global warming or depletes the ozone layer.

Due to its friendliness to nature & human life, now a days InerGen is extensively used in Fire Suppression systems. Axcel Gases is well Equipped to Fill Inergen Gas Cylinders upto 300 Bar.

Axcel Gases is well equipped to fill all these Fire Suppression Gases with high accuracy and purity. After Filling, these Gases are tested for quality and are certified for their components concentration & purity.



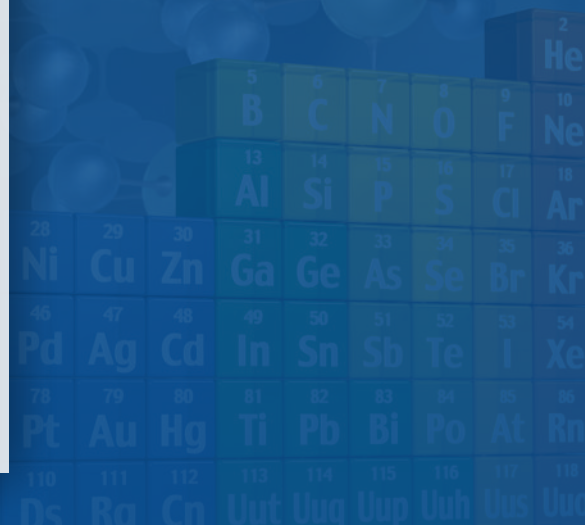
CALIBRATION GASES

Calibration Gas or a Reference Gas is a mixture of two or more gases mixed together and used to calibrate various types of analytical instruments. Axcel, along with its associated companies offers high purity world class Calibration or Reference Gases and certifies them after analysing the same on highly sensitive and precisely Calibrated instruments like electronic Analysers & Gas Chromatographs.



BLENDING

The most accurate and reliable way to prepare true Calibration Gas is by Gravimetric Method. In this method each component is weighed separately on a highly precise weighing scale and there after compatible components are mixed together in a cylinder in requested proportion. At Axcel Gases we have high accuracy and high resolution weighing scales having least count of 0.0001 grams using which, we are able to prepare Percentage or PPM or PPB level calibration gas mixtures. We also use dilution technique to provide highly accurate and low concentration calibration gas mixtures.



ANALYSIS

Different gases have different physical and chemical properties sometimes unknown. They act differently with each other. This behaviour coupled with various other parameters affect their concentrations. That is why it is mandatory to check the concentration of each component after mixing. At Axcel Gases we have different Analysers and Gas Chromatographs using which we check the actual concentration of each component present in the cylinder after mixing. After analysing each component for its available true value, we certify it for its respective concentration present in the cylinder.

Trace Oxygen Analyzer
(PPM Level Oxygen)

Binary Analyzer
(PPM & Percentage)

Oxygen Percentage Analyzer
(% Level Oxygen)

Carbon Dioxide Analyzer
(% Level Co₂)

Nitrogen Analyzer
(% Level Nitrogen)

Moisture Analyzer
(Dew Point and PPM Level)

THC Analyzer
(PPM Level)

Gas Chromatographs

A true calibration gas mixture, also provides information about Preparation Tolerance & Certification Accuracy.

PREPARATION TOLERANCE

It is the actual variation in mixed concentration of a particular component from what has been requested for. The tighter the tolerance, the accurate will be the calibration gas mixture. For low Concentration mixing, like PPM or PPB, the Preparation Tolerance (also called as Blend Tolerance or PTL/BTL) is high and for High Concentration mixing like Percentage, Preparation Tolerance is Low.

CERTIFICATION ACCURACY

It is used to define the correctness or the trueness of the analytical instrument with respect to the primary standard. Every Analytical instrument has small amount of variation attached to it. This variation shall be within the acceptable, measurable limit, and must be indicated well. The smaller the variation, the better the instruments and true are the results produced with respect to the primary standard.



A true calibration gas mixture shall always provide the information about various parameters. We, at Axcel Gases, takes care that we provide all the necessary information to our valued customers so that they can rely properly on our certified test results and can make use of at their end in more effective and true manner.

Name of the Gas Components for Calibration Gas Mixtures.

01	1-Butene	16	Benzene	31	Ethanol	46	Nonane
02	1-Hexene	17	Cis-2-butene	32	Hydrogen Sulphide	47	Nitric Oxide
03	1-Octene	18	Cis-2-pentene	33	Hydrogen Chloride	48	Nitrogen-dioxide
04	1-Pentene	19	Carbon Mono Oxide	34	Helium	49	Pentane
05	2,2,Dimethyl Butane	20	Methane	35	Heptane	50	Octane
06	2-Butanethiol	21	Arsine	36	Hexane	51	Propadiene
07	2-Methyl - 1- Butene	22	Carbonyl Sulphide	37	Propane	52	Propylene
08	2-Methyl - 2 - Butene	23	Cyclo Hexane	38	Iso Butane	53	Sulphur Dioxide
09	2 Methyl Pentane	24	Deuterium	39	Iso Pentane	54	Trans-2-butene
10	2 Pentene	25	Di Methyl Ether	40	Krypton	55	Trans-2-octene
11	2-Propanol	26	Ethyl Benzene	41	Methyl Cyclo Hexane	56	Trans-2-pentene
12	3-Methyl-1- Butene	27	Ethyl Acetate	42	Methyl Cyclo Pentane	57	Phosgene
13	3-Methyl Heptane	28	Ethane	43	Methanol	58	Toluene
14	3-Methyl Pentane	29	Ethylene Oxide	44	Nitrous Oxide	59	Xenon
15	Acetone	30	Ethylene	45	N-butane	60	Xylene

* There are hundreds of components available. Please contact us for more details.

GAS CYLINDER : HIGH PRESSURE & ACETYLENE

Axcel is the market leader in the Gases & Cylinders business as well. Our main objective is to offer complete solution that meets the entire needs of the customers. All the cylinders provided by us confirms to BS EN ISO 7866:2012 , ISO 7866:2012, IS 15660, IS 7285 & IS 7312 and are equipped with cylinder filling permissions issued by CCOE – Nagpur (Chief Controller Of Explosives – Nagpur, a Department under Central Govt. Ministry of India). The main types of cylinders we provide are:-



HIGH PRESSURE SEAMLESS CYLINDERS

These cylinders are mostly used and are available in a wide range, starting from 1 Ltr WC to 80 Ltrs in a working pressure range of 150 Kg/Cm² to 350 Kg/Cm². Technical Details of Some of the commonly used High Pressure Seamless cylinders is as below:

Technical Specifications for some commonly used High Pressure Seamless Cylinders.

Working Pressure (Bar)	Water Capacity (ltrs)	Gas Capacity (Cu. m)	Outside Diameter (MM)	Min Wall Thickness (MM)	Length (MM)	Tare Weight Approx (Kg)
150	2	0.3	108	3.5	330	4.5
	5	0.75	108	3.5	735	8
	10.2	1.53	140	4.2	855	14.9
	40	6	232	5.5	1200	48
	46.7	7	232	5.5	1370	54
200	6	1.2	140	3.5	610	11
	50	10	232	5.5	1455	58
	80	16	267	6.3	1738	88

* There are various other sizes of cylinders available. Please contact us with your particular requirement.

High Pressure Seamless Aluminium Cylinders

These cylinders are available in a wide range, starting from 1 Ltr WC to 10.2 ltrs WC with a working pressure range of 150 Kg/Cm². Technical Details of Some of the commonly used Aluminium cylinders is as below:

Technical Specifications for some commonly used Aluminum Cylinders.

Working Pressure (Bar)	Water Capacity (ltrs)	Gas Capacity (Cu. m)	Outside Diameter (MM)	Length (MM)	Tare Weight Approx (Kg)
150	1	0.15	90	262	1.2
	2.2	0.33	111	370	2.5
	3.1	0.47	111	496	3.3
	4.5	0.68	111	681	4
	5	0.75	111	756	4.5
	10	1.5	140	935	8.5

* There are various other sizes of cylinders available. Please contact us with your particular requirement.

Acetylene Cylinders

There are Two Types of Acetylene Cylinders. 3 Piece Welded & Seamless Type. These Acetylene Cylinders comes with the Solvent Acetone. If required, Axcel Gases can also provide Acetylene Cylinders filled with DMF (Di Methyl Formamide). Technical Details of Some of the commonly used Acetylene cylinders is as below:

Technical Specifications for Acetylene Cylinders.

Type	Hydrostatic Stretch Pressure (Kg/Cm ²)	Test Pressure (Kg/Cm ²)	Max Working Pressure at 150 C (Kg/Cm ²)	Water Capacity (ltrs)	Gas Capacity (Cu. M)	Outside Diameter (MM)	Min Wall Thickness (MM)	Length (MM)	Tare Weight Approx (Kg)
Three Pc. Welded	53	40	16	17	3.2	185	4	815	29
Three Pc. Welded	53	40	16	41	7	258	4	960	55
Seamless	250	150	16	41	7	232	5.6	1220	65

GAS CYLINDER CASCADES/QUADS

Axcel Gases also manufactures customized cylinder quads or cascades as per the specific requirement. Cascades or Quads are a type of arrangement in which, a number of cylinders are interconnected, specially designed for loading/unloading as a bunch & filled or discharged together. Quad is required where large quantity of gas is to be consumed & also to cut down the operational cost. Quads comes in two types of arrangements; Vertical Quads and Horizontal Quads. We can also provide quads for offshore or under water working where undesired corrosion happens & where static current is the major drawback. These quads are made of corrosion resistant material, galvanized and painted well to avoid corrosion as well as static current. We also make gas cylinder transportation cascades/racks for safe and easy movement of cylinders.



DEWARS, REGULATORS & VALVES



DEWARS

This is also called as Cryogenic Containers used to store the cryogenic liquids like Liquid Nitrogen, Liquid Argon, Liquid oxygen or Liquid Helium at a temperature of -180°C to -200°C . There are different sizes of Dewars are available with Axcel Gases.



REGULATORS

These are used to regulate the high Pressure of a cylinder to Low / workable Pressure. There are different type and Kind of regulators available and their use depends upon the Gases for which it is to be used and the Purpose. Usually there are Brass Regulators and Stainless Steel Regulators. For Non Reactive & Oxidizer Gases like Argon, Nitrogen, CO_2 , Hydrogen, Helium, Oxygen etc, Brass Regulators are used. Stainless steel regulators are used for Reactive, Corrosive or Toxic gases like CO , SO_2 etc. Axcel Gases Can also provide you various other types of regulators as per customized need.



VALVES

Different type of valves having different type of threads and different MOC are available with us. The choice of valve is solely depends upon the Type of Gas and its application/purpose. Brass MOC valves are for Non Reactive, & Oxidizer Gases like Argon, Nitrogen, CO_2 , Hydrogen, Helium, Oxygen etc, and Stainless Steel MOC valves are used for Reactive, Corrosive or Toxic gases like CO , SO_2 etc. The Outlet Thread is also different for different type of Gas groups like oxidizer, Toxic, Liquid, Inert etc. At Axcel Gases we can also provide you all the types of valves as per particular applications.

HYDROTESTING & MANIFOLD PIPELINE

HYDRO TESTING & PERIODICAL INSPECTION

As Per PESO & BIS regulations, it is mandatory for every cylinder to undergo Periodical Inspection & Testing Process (Hydro Test) after every specific interval. The Re Test Periodicity / Interval depends upon the nature of Gas the cylinder had been used for storage in the past & is duly specified by BIS. A Cylinder is Hydro Tested at a pressure called Test Pressure, specified in accordance with the Manufacturing Standard of the cylinder. Axcel Gases is well equipped to Hydro Test cylinders up to 700 Bar Test Pressure. Hydro testing is carried out to check the elasticity of the cylinder material. Every cylinder material under goes elastic stress / expansion during each gas filling process. With time and repetition, this elasticity goes on deteriorating, which is undesirable for safety reason. The Cylinder Testing procedure involves measurement of various parameters like Permanent Expansion, Weight loss, Internal / External damages & Body defects etc. Axcel Gases have vast experience, expertise and instruments to carry out this testing procedure as per the rules & regulations laid down by BIS & PESO. We have a PESO approved Cylinder Hydrotesting Station. Being a manufacturer of Acetylene gas, Axcel also provides periodical inspection and testing of Acetylene Gas cylinders. At Axcel Gases we take utmost care that each and every cylinder is fitted with appropriate valve and is duly painted with a particular color code as per the guidelines of PESO / BIS.

MANIFOLD & PIPELINE

Different costumers have different needs according to their particular process requirement. Axcel Gases understands the need of the particular customer and provides them customized solutions by installing manifold and pipelines at customers site. This reduces the cost of operations by lowering down the labour cost, handling cost, equipment cost & wastage cost etc to a considerable level. All these parameters combined together get converted into low cost of operations thereby generating revenues. Apart from this, setting up manifold and Pipeline at consumer sites also reduces the risk of accidents to a negligible level.



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