



# AJAY AIR PRODUCTS (P) LTD.

*growing beyond boundaries...*



Since 1994

**Founded in 1994, Ajay Air Products (P) Ltd.**, has become a leading industrial and specialty gases importer, manufacturer and distributor in India. We deal in Pure gases, Rare Gases, Calibration Gas Standards, Specialty Gases, Hydrocarbons, Bulk Cryogenic Liquids, Gas Cylinders, Gas Regulators and Gas Handling Equipment sourced from globally renowned companies. Established for almost two decades now, Ajay Air Products (P) Ltd., today is the leading importer & supplier of Sulphur Hexafluoride (SF<sub>6</sub>) gas in India. We have a state of the art gas filling facility, located at Greater Noida in Uttar Pradesh for bottling Pure Gases, Specialty Gases, Refrigerants and to manufacture customized Calibration Gases/Gas Mixtures. We contribute to the customers' value by offering best quality products & services at most competitive price and cater to different industry segments for a varied list of products. Our customers include many of the top business houses in India and overseas.

#### **Products we deal:**

» **Cryogenic Bulk Gases:** We offer complete range of bulk cryogenic liquids like liquid nitrogen, liquid argon, liquid oxygen and liquid Carbon dioxide. We also undertake installation of cryogenic tanks at customer site.

#### » **Speciality Gases:**

- **Hydrocarbons:** Methane, Ethane, n-Butane, Ethylene, Propylene, etc.
- **Hydrocarbon Refrigerants:** R-600a (Isobutane), R-290 (Propane), Hydrocarbon Blend (R600a+R290) R-1170, R-1290, R-170 etc.
- **Refrigerant Gases:** R-134a, R-404a, R-407c, R-410a, R-23, R-123, R-141b etc.
- **Semiconductor gases:** Arsine, Germane, Diborane, Silane, Helium, Carbon Tetrafluoride, Sulphur Hexafluoride (SF<sub>6</sub>) etc.
- **Pure Gases:** Oxygen, Nitrogen, Hydrogen, Zero Air, Helium, Argon, Carbon Dioxide,, Acetylene, Nitrous oxide etc

» **Rare Gases:** Neon, Krypton, Xenon.

» **Gas Mixtures & Calibration Gas Mixtures**

» **Sterilizing gas mixture**

» **Gas Cylinders and regulators**

» **Gas handling Equipment**

**Industries we serve:** Petrochemicals, Refineries, Air-conditioning & Refrigeration, Pharmaceutical, Cement, Sterilization, Fertilizer, Automobile, Electrical, Electronic, Cement, R&D Labs and Institutions, Power, Food, Animal Husbandry, Semen Banks besides Power Utilities like PGCIL, NTPC, NHPC, Atomic Energy, Nuclear Power Plants, State Electricity Boards etc.

## R-134a

**Ecorane 134a** Refrigerant Gas (R-134a) is a colorless, odorless, non-flammable, non-toxic & non-ozone depleting Hydro Fluoro Carbon compound. Internationally recognized as one of the best refrigerants working substance to substitute R-12.

### Applications:

Extensively used in household and commercial refrigeration and automotive air-conditioning systems. Suitable for use in medium temperature food cabinets and water chiller. Also used as Propellant for aerosol in pharmaceuticals, deodorants, perfumes, air fresheners etc. Used in the manufacture of other mixed refrigerants like R-404a and R-407c.

**Packaging:** Disposable cans of 340 & 500 grams, cylinders of 10 Kg /62 Kg and 900 Kg Tonner.



### Physical Properties

Appearance	Clear & Colorless gas
Odor	Odorless
Chemical name	1,1,1,1,2-Tetrafluoroethane
Chemical Formula	CH <sub>2</sub> FCF <sub>3</sub>
Molecular weight	102
Boiling point @101.3 kpa	-26.3°C
Critical Temperature	101.1°C
Critical Pressure(kpa)	4066.6
Ozone Depletion Potential (ODP)	0

### Specifications

Purity (% by weight)	≥ 99.9
Moisture (ppm by weight)	≤ 10.0
Acidity (m/m) ppm (as HCl)	≤ 0.0001
Chloride content % (m/m)	≤ 0.0003
Non condensing vapour % (m/m)	≤ 100

## R-404a

**Ecorane 404a** Refrigerant Gas (R-404a) is a colorless, odorless, non-flammable, non-ozone depleting mixture of three HFC compounds  $CF_3 CHF_2$  (R-125),  $CF_3 CH_3$  (R-143a) and  $CH_2F CF_3$  (R-134a) Serve as a long term alternative to R-502 and R-22.

### Applications:

Extensive use in commercial and medium temperature refrigeration application, use in retrofits or new installation, reach-in cooler, supermarket freezer case, display cases, transport refrigerator, ice making machine, cold storage rooms etc.

**Packaging:** Cylinders of 8 Kg/10 Kg/45 Kg/50 Kg and Tonner of 750 Kg.



### Physical Properties

Appearance	Clear & Colorless gas
Odor	Odorless
Chemical name	Blend of (R-125/143a/134a)
Chemical Formula	$CHF_2CF_3/CH_3CF_3/CF_3CH_2F$
Molecular ratio	44/52/4 (by weight)
Molecular weight	97.6
Boiling point @101.3 kpa	-46.2°C
Critical Temperature	72°C
Critical Pressure(kpa)	3728
Ozone Depletion Potential(ODP)	0

### Specifications

Purity (% by weight)	≥ 99.9
Moisture (ppm by weight)	≤ 10.0
Acidity (m/m) ppm	≤ 0.1
Chloride content	pass
High Boiling Residue (ppm by weight)	≤ 100

## R-407c

**Ecorane 407c** Refrigerant Gas (R-407c) is a colorless, odorless, non-flammable, non-ozone depleting mixture of three HFC compounds CH<sub>2</sub>F<sub>2</sub> (R-32), CHF<sub>2</sub>CF<sub>3</sub> (R-125) & CF<sub>3</sub>CH<sub>2</sub>F (R-134a).  
Serve as long term alternative to R-22 in commercial refrigeration systems.

### Applications:

It's a suitable refrigerant for retrofits or new installation including food storage application, supermarket freezers, display cases, reach-in coolers, ice making machines and transport refrigeration.

**Packaging:** Cylinders of 8 Kg/10 Kg/45 Kg/50 Kg and Tonner of 900 Kg.



### Physical Properties

Appearance	Clear & Colorless gas
Odor	Odorless
Chemical name	Blend of (R-32/125/134a)
Chemical Formula	CH <sub>2</sub> F <sub>2</sub> /CHF <sub>2</sub> CF <sub>3</sub> /CF <sub>3</sub> CH <sub>2</sub> F
Molecular ratio	23/25/52 (by weight)
Molecular weight	86.2
Boiling point @101.3 kpa	-46.5°C
Critical Temperature	86°C
Critical Pressure(kpa)	4630
Ozone Depletion Potential(ODP)	0

### Specifications

Purity (% by weight)	≥ 99.9
Moisture (ppm by weight)	≤ 10.0
Acidity (m/m) ppm	≤ 0.1
Chloride content	pass
High Boiling Residue (ppm by weight)	≤ 100

## R-410a

**Ecorane 410a** Refrigerant Gas (R-410a) is a colorless, odorless, non-flammable, non-ozone depleting mixture of two HFC compounds CH<sub>2</sub>F<sub>2</sub> (R-32) & CHF<sub>2</sub>CF<sub>3</sub> (R-125).

Serve as long term alternative of R-22 used in new residential and commercial air conditioning systems, heat pumps, dehumidifiers and small chillers.

### Applications:

It's a suitable refrigerant for retrofits or new installation including food storage application, supermarket freezers, display cases, reach-in coolers, ice making machines and transport refrigeration.

**Packaging:** Cylinders of 8 Kg/45 Kg and 750 Kg Tonne.



### Physical Properties

Appearance	Clear & Colorless gas
Odor	Odorless
Chemical name	Blend of (R-32/125)
Chemical Formula	CH <sub>2</sub> F <sub>2</sub> /CHF <sub>2</sub> CF <sub>3</sub>
Molecular ratio	50/50 (by weight)
Molecular weight	72.6
Boiling point @101.3 kpa	-51.6°C
Critical Temperature	70.2°C
Critical Pressure(kpa)	4770
Ozone Depletion Potential(ODP)	0

### Specifications

Purity (% by weight)	≥ 99.9
Moisture (ppm by weight)	≤ 10.0
Acidity (m/m) ppm	≤ 0.1
Chloride content	pass
High Boiling Residue (ppm by weight)	≤ 100

# "Ecorane" Hydrocarbon Refrigerants for the green environment

## R-290 (Propane)

Naturally occurring hydrocarbon refrigerant gas, is the natural choice to replace ozone depleting refrigerant R-22. Our "Ecorane" brand high purity R-290 is preferred choice for use in air-conditioning and commercial/industrial refrigeration systems.

### Specifications:

- Purity:  $\geq 99.5\%$
- Moisture:  $\leq 10\text{ppm}$  (weight)
- Zero Ozone depletion potential (ODP)
- Negligible Global warming potential (GWP)
- Flash point:- Flammable gas

**Packaging:** Disposable CAN, cylinders of 4 Kg/20 Kg and Rolling Drums of 220 Kg/400 Kg



## R-600a (Isobutane)

Naturally occurring hydrocarbon refrigerant gas, is the natural choice to replace ozone depleting fluorocarbons like R-12 & R-134a. Our "Ecorane" brand high purity R-600a with critically low moisture content is the ideal choice for refrigeration systems, especially in domestic refrigerators and freezers.

### Specifications:

- Purity:  $\geq 99.5\%$
- Moisture:  $\leq 10\text{ppm}$  (weight)
- Zero Ozone depletion potential (ODP)
- Negligible Global warming potential (GWP)
- Flash point:- Flammable gas

**Packaging:** Disposable CAN, cylinders of 5 Kg/25 Kg and Rolling Drums of 250 Kg/440 Kg

## Freeze 30 (Hydrocarbon Blend)

Zeotropic Hydrocarbon Blend of Isobutane & Propane (R-600a & R-290), naturally occurring hydrocarbon refrigerant gases. It is the perfect replacement for fluorocarbons like R-12 & R-134a and is being extensively used in refrigeration applications and automotive air-conditioning systems.

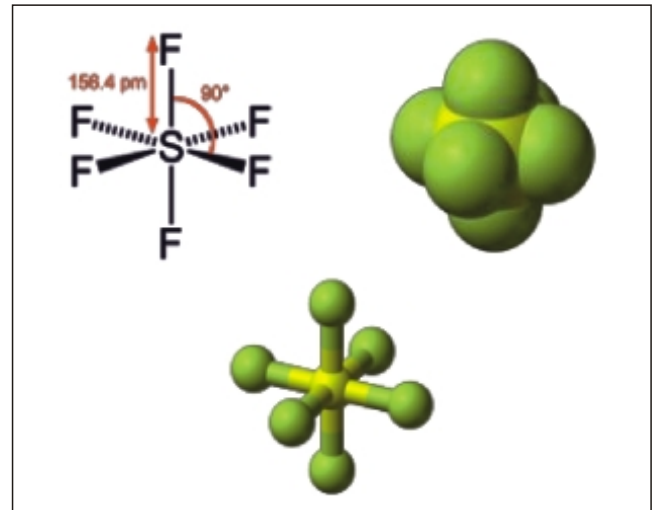
### Specifications:

- Purity:  $\geq 99.5\%$
- Moisture:  $\leq 10\text{ppm}$  (weight)
- Zero Ozone depletion potential (ODP)
- Negligible Global warming potential (GWP)
- Flash point:- Flammable gas

**Packaging:** Disposable CAN, cylinders of 4.5 Kg/22 Kg and Rolling Drums of 240 Kg/410 Kg



**Elektra Sulphur Hexafluoride (SF6)** is a colourless, non-toxic and non-flammable gas at atmospheric temperature. It is an excellent dielectric with excellent electric insulating and unique arc interruption properties that have led to its successful and widespread use in circuit breakers, gas insulated substations and in the fields of electric, laser, medical, meteorological, freezing, fire-fighting, chemical, military, space aviation, nonferrous metallurgy and physical research etc. In semiconductor manufacturing, sulphur hexafluoride is a fluorine source for high density plasma etching without generating carbon by-products.



### Properties

Molecular formula	SF6
Molar mass	146.06 g mol <sup>-1</sup>
Appearance	Colourless, odourless gas
Density	6.17 g/l
Boiling point	-64 °C, 209 K, -83 °F

### Specifications:

Description	IEC 60376	Elektra SF6 Specification
Sulphur Hexafluoride (SF6): % (m/m)	≥ 99.7	≥ <b>99.995</b>
AIR : % (m/m)	≤ 0.2	≤ <b>0.003</b>
CF4 : % (m/m)	≤ 0.24	≤ <b>0.001</b>
H2O Dew Point °C	≤ -36.0	≤ <b>-56.9</b>
Moisture ppm (m/m)	≤ 25.0	≤ <b>2.0</b>
Acidity (express as HF) : ppm (m/m)	≤ 1.0	≤ <b>0.1</b>
Hydrolysable Fluoride (expressed as HF): ppm (m/m)	/	≤ <b>0.2</b>
Mineral Oil : ppm (m/m)	≤ 10	≤ <b>2.0</b>
Biological noxious test	Non-toxic	<b>Non-toxic</b>

Available in cylinder sizes of 2.1 Kg to 52.5 Kg and 750 Kg tonners.  
 We can also provide customized solutions as per customer requirement.



**Ethylene** is a natural plant hormone released by the fruit as it ripens. Use of ethylene gas speed up the ripening of the fruits. It is the only scientific and safe ripening method accepted worldwide and approved by the Government. It does not have any effect on the aroma and flavor of the fruit. Ethylene promotes ripening of fruits like banana, mango, papaya, pear, pineapple, orange, sweet lime (mosambi) etc.

**Method of use:** (for disposable can) The type of fruit and size of the chamber/room decides the concentration of Ethylene to be maintained during the ripening process. The quantity of Ethylene gas in this canister is suitable for a chamber/room of 27 cubic meter (3M x 3M x 3M) to 36 cubic meter (3M x 3M x 4M) and sufficient to ripen 2 tons of bananas /mangoes.

The fruit kept in plastic/wooden trays/crates are stacked properly in the gas tight chamber/room. The temperature of the room to be controlled as per the recommendation for the particular fruit (15°C to 18°C for bananas). Release Ethylene gas completely in the chamber /room by pressing the valve on the top of canister. Ensure proper air circulation so that the concentration of Ethylene is uniformly spread in the chamber/room. It takes 24 -48 hours for the fruit to be ready for storage/transportation.

**CAUTION:**

Pressurised can. Keep in a cool place out of reach of children. To be used by qualified and trained personnel only. Can cause drowsiness, nausea, irritation, inflammation & frostbite.



**Warning**

Ethylene is highly flammable gas. Keep the can away from naked flame or any oxidizing agent. Do not burn empty can - it may explode.

**First Aid Measures :**

**Inhalation :** Immediately move to fresh air, take deep breath and give artificial respiration.

**Skin contact:** Wash the affected area gently with plenty of running water.

**Eyes :** Wash with plenty of cold water and seek medical attention.

**Package:** Disposable Can, Cylinders capacity 46.7 ltr. of Pure Ethylene, gas mixture of 5% to 10% Ethylene balance Nitrogen.



Does not contain CFC.



### CRYOGENIC LIQUIDS

We distribute high purity Cryogenic Liquids like Liquid Nitrogen, Liquid Oxygen, Liquid Argon & Liquid Carbon Dioxide.



### STERILIZING GAS MIXTURE

EO and CO<sub>2</sub> mixture is widely used on medical equipment, food stuffs, cosmetics, preservation of documents etc.

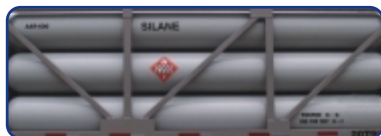
### CALIBRATION GAS MIXTURES

We are making gas mixtures from two components to eighteen components calibration gases which are widely applied to the scientific research, medical care, environmental protection, petrochemicals Industries etc.



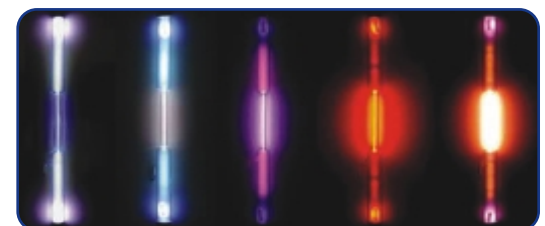
### ELECTRONIC SPECIALTY GASES

We have independently developed a wide range of electronic grade specialty gases like Arsine, Carbon Monoxide, Methane, Ammonia, Sulphur Hexafluoride, Hydrogen, Carbon Tetrafluoride, Phosphene, Nitrogen Trifluoride, Deuterium, Hydrogen Chloride, Hydrogen Bromide etc which are widely used in semiconductor, chip, solar cell, fiber etc.



### LIGHTING GAS MIXTURES

We deal in all kinds of Lighting gas mixtures, halogen lighting gas mixture besides we can supply Krypton, Neon, Xenon, Argon and their customized gas mixtures.



### MEDICAL GASES

Aerobic, Anaerobic, blood gas mixtures, excimer laser gas, Lungs Diffusion, NO Mixture etc.

## Products Specifications:

Product	Grade	Maximum limits of impurities (in ppm by volume)						% Purity
		O2	H2O	CO2	CO	N2	THC	
Argon	Zero	1	1	0.1	0.1	0.5	0.5	99.9997
	Spectro	1	1	0.1	0.1	1	0.5	99.9996
	I	2	2	0.1	0.1	2	0.5	99.9993
	II	4	4	0.5	0.5	4	0.5	99.9986
	III	6	6	1	1	23	3	99.9960
	Commercial							99.9950
	Liquid	2	2	1	0.1	4	0.5	99.999

Product	Grade	Maximum limits of impurities (in ppm by volume)						% Purity
		O2	H2O	CO2	CO	AR	THC	
Nitrogen	Zero	1	1	0.5	0.5	-	0.1	99.9997
	I	2	2	0.5	0.5	3	0.2	99.9992
	II	4	4	0.5	0.5	8	0.5	99.9982
	III	6	6	1	1	10	1	99.9975
	Commercial	-	-	-	-	-	-	99.5000
	Liquid High Purity	2	2	0.5	0.5	3	0.2	99.999
	Liquid Commercial	-	-	-	-	-	-	99.90

Product	Grade	Maximum limits of impurities (in ppm by volume)						% Purity
		O2	H2O	CO2	CO	N2	THC	
Hydrogen	Zero	1	1	1	0.5	40	0.5	99.9956
	I	2	2	2	1	50	0.5	99.9943
	II	4	4	2	1	80	0.5	99.9909
	III	6	6	2	1	120	1	99.9864
	5.0	≤ 2	≤ 2	≤ 0.25	≤ 0.25	≤ 5	≤ 0.2	≥ 99.999

Product	Grade	Maximum limits of impurities (in ppm by volume)				% Purity
		H2O	CO2 + CO	N2 + AR	THC	
Oxygen	5.0	≤ 2	≤ 0.5	≤ 8	≤ 0.2	≥ 99.999

Product	Grade	Maximum limits of impurities (in ppm by volume)					% Purity
		O2	H2O	CO2 + CO	N2	THC	
Helium	5.0	≤ 2	≤ 2	≤ 0.5	≤ 4	≤ 0.5	≥ 99.999
	4.5	≤ 5	≤ 5	≤ 1	≤ 30	≤ 1	≥ 99.995

Product	Grade	Maximum limits of impurities (in ppm by volume)			% Purity
		H2O	CO2 + CO	THC	
Zero Air	UHP	≤ 2	≤ 0.5	≤ 0.1	≥ 99.999
	Zero	5	2.5	5	-

## Our Happy Customers



Smart solutions.  
Strong relationships.



Innovation for the Real World



पावरग्रिड  
Power Grid Corporation of India



LARSEN & TOUBRO



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*and many more...*



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