



SIAD PACKAGED GASES

Oxygen, nitrogen, argon, carbon dioxide, hydrogen and many many more: whether obtained from the atmosphere through physical processes or recovered by production cycles, gases are fundamental elements of technical progress in this modern era.

From the food to the automobile industries, from chemistry to metallurgy, from metal fabrication to environmental and medical applications, gases are used in all the production processes.

Founded in Bergamo in 1927, SIAD is a leading Group in the gases sector: industrial, specialty and medical gases, technology, plants and services all gas-related.

Operating in Italy with a network of strategically placed production, distribution and sales centres and in Europe in eight different Countries, SIAD international presence is strengthened by the joint-venture with the multinational Praxair, one of the largest in the gases sector.

SIAD Group is also active in other markets connected with the world of gases: welding and industrial goods, gas production plants, compressors and automation, healthcare.

Since 1927, SIAD is driven on by a continuous quest for quality, technology and innovation. As results of this constant commitment and a continuous refinement of production methods, high quality is the element that distinguishes SIAD industrial gases by offering products and services of an irreproachable level.



ACETYLENE



Cylinder colour:
body grey RAL 7031
shoulder reddish brown RAL 3009
(European Norm UNI-EN 1089-3)
(old colour)
body grey RAL 7015
shoulder orange RAL 2004

CONVERSION TABLE

1 m³ = 1.074 kg

1 kg = 0.931 m³

m³: gaseous at 15 °C and 98 kPa
(735.5 mm Hg)

Technical Properties

Product: acetylene

Chemical formula: C₂H₂

Purity level: ≥ 99.0%

Relative density (air = 1): 0.9

Aspect: colourless gas

Odour: ethereal, sweetish

Limit of inflammability in air: 2.0 ÷ 82%

Applications

- Welding and cutting (autogenous energy);
- production of lampback;
- flaming out.

METHODS OF DELIVERY - dissolved in solvent

In cylinders

capacity	outside diameter	height*	gross weight*	contained gas**
I H ₂ O	mm	mm	kg	kg
14	168	965	30 - 30.32	2.4 - 2.8
20	203	965	42.5 - 43.0	3.5 - 4.0
40	227	1370	71.0 - 72.0	7.0 - 8.0
50	227	1680	86.3 - 87.6	8.7 - 10

* gross weight including valve, covercap, acetone and porous mass

** according to the legislation in force in the different countries

Other capacities are available upon request

In packs of cylinders

cylinders	dimensions (LxWxH)	gross weight**	contained gas**
No.	mm	kg	kg
16	1030x1030x1645	1578 - 1598	140 - 160

** according to the legislation in force in the different countries

Other capacities are available upon request

Caution

Highly flammable and explosive. It can cause asphyxia in high concentrations.

AIR



Cylinder colour:
body grey RAL 7031
shoulder white+black RAL 9005+RAL 9010
(European Norm UNI-EN 1089-3)
(old colour)
body grey RAL 7015
shoulder white and black

CONVERSION TABLE

1 m³ = 1.186 kg = 1.351 l
1 kg = 0.843 m³ = 1.144 l
1 l = 0.740 m³ = 0.874 kg

m³: gaseous at 15 °C and 98 kPa
(735.5 mm Hg)
l: unit of volume in the liquid state

Technical Properties

Product: mix of N₂ and O₂

Relative density (air = 1): 1

Aspect: colourless gas

Odour: odourless gas

Limit of inflammability in air: not applicable

Applications

- Respiration;
- gas chromatography;
- atomic absorption;
- zero gas in instrument calibration.

METHODS OF DELIVERY - gaseous

In cylinders

capacity	outside diameter	height*	gross weight*	contained gas
l H ₂ O	mm	mm	kg	m ³
14	168	960	23.3	2.8
20	203	960	34.2	4.0
50	227	1680	70.0	10.0

* with valve and cover cap

Other capacities are available upon request

In packs of cylinders

cylinders	dimensions (LxWxH)	gross weight	contained gas
No.	mm	kg	m ³
16	1030x1030x1935	1550	160

Other capacities are available upon request

Caution

Oxidant. It supports combustion.

AMMONIA



Cylinder colour:
body grey RAL 7031
shoulder yellow RAL 1018
(European Norm UNI-EN 1089-3)
(old colour)
body grey RAL 7015
shoulder green RAL 6001

CONVERSION TABLE

1 m³ = 0.708 kg = 1.000 l
1 kg = 1.413 m³ = 1.413 l
1 l = 1.000 m³ = 0.708 kg

m³: gaseous at 15 °C and 98 kPa
(735.5 mm Hg)
l: unit of volume in the liquid state

Technical Properties

Product: ammonia

Chemical formula: NH₃

Purity level: ≥ 99.7%

Relative density (air = 1): 0.597

Aspect: colourless gas

Odour: pungent

Limit of inflammability in air: 15 ÷ 28%

Applications

- In the metallurgical industry, as hydrogen carrier for heat treatment;
- in the chemical industry, as chemical reagent to produce nitric acid, polyamides and fertilisers;
- as refrigerant, because of its high latent heat of evaporation;
- in the electronic industry, as process gas in manufacturing of semiconductor devices.

METHODS OF DELIVERY - gaseous

In cylinders

capacity	outside diameter	height*	gross weight*	contained gas
l H ₂ O	mm	mm	kg	kg
40	315	800	41	20

* with valve

Other capacities are available upon request

Caution

It attacks eyes, lungs and skin; it's toxic when inhaled.

ARGON



Cylinder colour:
body grey RAL 7031
shoulder dark green RAL 6001
(European Norm UNI-EN 1089-3)
(old colour)
body grey RAL 7015
shoulder purple RAL 3005

CONVERSION TABLE

1 m³ = 1.636 kg = 1.172 l
1 kg = 0.611 m³ = 0.718 l
1 l = 0.853 m³ = 1.396 kg

m³: gaseous at 15 °C and 98 kPa
(735.5 mm Hg)
l: unit of volume in the liquid state

Technical Properties

Product: argon

Chemical formula: Ar

Purity level: ≥ 99.996%

Relative density (air = 1): 1.38

Aspect: colourless gas

Odour: odourless gas

Limit of inflammability in air: not inflammable

Applications

- In the metallurgical industry, for degassing of molten aluminium, agitation and chemical homogenization of molten metals, heat treatment of metals, melting of tin and zinc.

METHODS OF DELIVERY - gaseous

In cylinders

capacity l H ₂ O	outside diameter mm	height* mm	gross weight* kg	contained gas m ³
14	168	960	25.0	3.1
20	203	960	36.7	4.4
50	227	1680	75.7	10.8

* with valve and cover cap

Other capacities are available upon request

In packs of cylinders

cylinders No.	dimensions (LxWxH) mm	gross weight kg	contained gas m ³
16	1030x1030x1935	1642.7	172.8

Other capacities are available upon request

liquefied and refrigerated

In tanks

Capacity l:

1.400 - 3.000 - 6.000 - 12.000 - 22.000 - 32.000 - 50.000

Caution

It can cause asphyxia in high concentrations. Furthermore, contact with the liquid product can cause cold and freezing burns.

CARBON DIOXIDE



Cylinder colour:
body grey RAL 7031
shoulder grey RAL 7037
(European Norm UNI-EN 1089-3)
(old colour)
body grey RAL 7031
shoulder yellow RAL 7037

CONVERSION TABLE

1 m³ = 1.813 kg = 2.391 l
1 kg = 0.552 m³ = 1.319 l
1 l = 0.431 m³ = 0.758 kg

m³: gaseous at 15 °C and 98 kPa
(735.5 mm Hg)
l: unit of volume in the liquid state

Technical Properties

Product: carbon dioxide

Chemical formula: CO₂

Purity level: ≥ 99.5%

Relative density (air = 1): 1.529

Aspect: colourless gas

Odour: odourless gas

Limit of inflammability in air: not inflammable

Applications

- In the food and beverage industry, for thermo-regulation, catering, modified atmosphere packaging, food freezing and chilling, beverage carbonation and transport of refrigerated products;
- In the environmental sector, for water treatment, blasting and regeneration of water wells.
- In the nurseries, for nourishment of plants;
- In the metallurgical industry, for heat treatment of alloys.

METHODS OF DELIVERY - liquefied

In cylinders

capacity l H ₂ O	outside diameter mm	height* mm	gross weight* kg	contained gas kg
14	168	960	30.0	10.5
20	203	960	44.5	15.0
27	203	1230	54.5	20.2
40	203	1670	77.0	30.0
50	227	1680	98.0	37.5

* with valve and cover cap

Other capacities are available upon request

In packs of cylinders

cylinders No.	dimensions (LxWxH) mm	gross weight kg	contained gas kg
16	1030x1030x1935	1710	480

Other capacities are available upon request

In tanks

Capacity l:

1.400 - 3.000 - 6.000 - 12.000 - 22.000 - 32.000 - 50.000

Caution

Maximum concentrations of free carbon dioxide in working areas must not be greater than 0.5%. Furthermore, contact with the product in the liquid or solid phases can cause cold or freezing burns.

HELIUM



Cylinder colour:
 body grey RAL 7031
 shoulder brown RAL 8008
 (European Norm EN 1089-3)
 (old colour)
 body grey RAL 7015
 shoulder brown RAL 8007

CONVERSION TABLE

1 m³ = 0.164 kg = 1.316 l
 1 kg = 6.106 m³ = 8.000 l
 1 l = 0.759 m³ = 0.125 kg
 m³: gaseous at 15 °C and 98 kPa
 (735.5 mm Hg)
 l: unit of volume in the liquid state

Technical Properties

Product: helium

Chemical formula: He

Purity level: ≥ 99.998%

Relative density (air = 1): 0.138

Aspect: colourless gas

Odour: odourless gas

Limit of inflammability in air: not inflammable

Applications

- Gas chromatography;
- air balloons;
- lasers;
- electronic industry;
- studies and research.

METHODS OF DELIVERY - gaseous

In cylinders

capacity	outside diameter	height*	gross weight*	contained gas
l H ₂ O	mm	mm	kg	m ³
14	168	960	20.5	2.8
20	203	960	30.2	4.0
50	227	1680	59.5	10.0

* with valve and cover cap

Other capacities are available upon request

In packs of cylinders

cylinders	dimensions (LxWxH)	gross weight	contained gas
No.	mm	kg	m ³
16	1030x1030x1935	1386	160

Other capacities are available upon request

liquefied

In "DEWAR" tanks

Caution

It can cause asphyxia in high concentrations.

HYDROGEN



Cylinder colour:
 body grey RAL 7031
 shoulder red RAL 3000
 (European Norm UNI-EN 1089-3)
 (old colour)
 body grey RAL 7015
 shoulder red RAL 3000

CONVERSION TABLE

1 m³ = 0.082 kg = 1.163 l
 1 kg = 12.12 m³ = 14.10 l
 1 l = 0.859 m³ = 0.071 kg
 m³: gaseous at 15 °C and 98 kPa
 (735.5 mm Hg)
 l: unit of volume in the liquid state

Technical Properties

Product: hydrogen

Chemical formula: H₂

Purity level: ≥ 99.8%

Relative density (air = 1): 0.07

Aspect: colourless gas

Odour: odourless gas

Limit of inflammability in air: 4 ÷ 75%

Applications

- In the food industry, to hydrogenate fats;
- in the chemical and petrochemical industry, for the production of gasoline;
- in the metallurgical industry, for heat treatment and reduction processes.

METHODS OF DELIVERY - gaseous

In cylinders

capacity	outside diameter	height*	gross weight*	contained gas
l H ₂ O	mm	mm	kg	m ³
14	168	960	20.5	2.8
20	203	960	30.2	4.0
50	227	1680	59.5	10.0

* with valve and cover cap

Other capacities are available upon request

In packs of cylinders

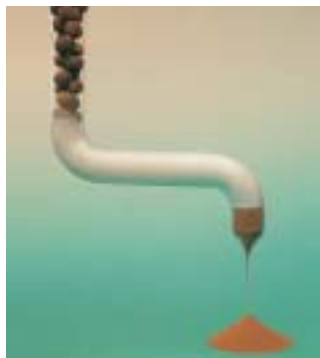
cylinders	dimensions (LxWxH)	gross weight	contained gas
No.	mm	kg	m ³
16	1030x1030x1935	1373	160

Other capacities are available upon request

Caution

Highly flammable. Furthermore, in high concentrations, it can cause asphyxia.

NITROGEN



Cylinder colour:
body grey RAL 7031
shoulder black RAL 9005
(European Norm UNI-EN 1089-3)
(old colour)
body grey RAL 7015
shoulder black RAL 9005

CONVERSION TABLE

1 m³ = 1.147 kg = 1.418 l
1 kg = 0.872 m³ = 1.236 l
1 l = 0.705 m³ = 0.809 kg

m³: gaseous at 15 °C and 98 kPa
(735.5 mm Hg)
l: unit of volume in the liquid state

Technical Properties

Product: nitrogen

Chemical formula: N₂

Purity level: ≥ 99.9%

Densità relativa (aria = 1): 0.97

Aspect: colourless gas

Odour: odourless gas

Limit of inflammability in air: not inflammable

Applications

- Stripping, inertization, packaging and deep-freezing;
- condensation of solvents, regeneration, inertization of chemical reactors, extrusion of plastic materials;
- thermo-regulation and grinding in a inert atmosphere;
- cryodeburring, cryogrinding and metallic braiding of rubber tubes;
- forming of bottles;
- heat treatment, injection into molten metals, cold shrink fitting and extrusion.

METHODS OF DELIVERY - gaseous

In cylinders

capacity	outside diameter	height*	gross weight*	contained gas
l H ₂ O	mm	mm	kg	m ³
14	168	960	23.2	2.8
20	203	960	34	4.0
50	227	1680	69.5	10.0

* with valve and cover cap

Other capacities are available upon request

In packs of cylinders

cylinders	dimensions (LxWxH)	gross weight	contained gas
No.	mm	kg	m ³
16	1030x1030x1935	1544	160

Other capacities are available upon request

liquefied and refrigerated

In tanks

Capacity l:

1.400 - 3.000 - 6.000 - 12.000 - 22.000 - 32.000 - 50.000

Caution

It can cause asphyxia in high concentrations. Furthermore, contact with the liquid product can cause cold and freezing burns.

OXYGEN



Cylinder colour:
body grey RAL 7031
shoulder white RAL 9010
(European Norm UNI-EN 1089-3)
(old colour)
body grey RAL 7015
shoulder white RAL 9010

CONVERSION TABLE

1 m³ = 1.311 kg = 1.147 l
1 kg = 0.763 m³ = 0.876 l
1 l = 0.872 m³ = 1.142 kg

m³: gaseous at 15 °C and 98 kPa
(735.5 mm Hg)
l: unit of volume in the liquid state

Technical Properties

Product: oxygen

Chemical formula: O₂

Purity level: ≥ 99.5%

Densità relativa (aria = 1): 1.1

Aspect: colourless gas

Odour: odourless gas

Limit of inflammability in air: not applicable

Applications

- In the food industry, for the breeding and transport of fish;
- in the environmental sector, for water treatment (MIXFLO® system) and for the chemical oxidation with ozone;
- in the glass industry, for melting of glass and frits;
- in the metallurgical industry (cupolas, arc and rotary furnaces).

METHODS OF DELIVERY - gaseous

In cylinders

capacity	outside diameter	height*	gross weight*	contained gas
l H ₂ O	mm	mm	kg	m ³
14	168	960	24	3.0
20	203	960	35.4	4.5
50	227	1680	71.7	10.5

* with valve and cover cap

Other capacities are available upon request

In packs of cylinders

cylinders	dimensions (LxWxH)	gross weight	contained gas
No.	mm	kg	m ³
16	1030x1030x1935	1580	168

Other capacities are available upon request

liquefied

In tanks

Capacity l:

1.400 - 3.000 - 6.000 - 12.000 - 22.000 - 32.000 - 50.000

Caution

Oxidant. It strongly increases combustion. Furthermore, contact with the liquid product can provoke cold and freezing burns.