

Marking

| | |
|----------------------------------|---|
| CAS-Number | 7440-37-1 |
| Characterization acc. ADR | UN 1006, Argon, compressed, 2.2 Class 2, 1A |

Cylinder Marking

shoulder:
dark green

Essential properties

colourless, odorless rare gas, compressed, heavier than air

Symbols of Risks

gas, compressed

Physical Properties

| | |
|-----------------------------------|-------------------------|
| molecular weight: | 39,948 kg/kmol |
| gas density at 0°C and 1,013 bar: | 1,784 kg/m ³ |
| density ratio to air: | 1,3797 |

For additional safety information see Material-/safety data sheet No. *-AR-003A

Valves / Manifolds

Valve connection 200 bar: acc. to national standards
300 bar: ISO 5145 Nr. 1; W 30 x 2

Recommended Manifolds Spectrolab FM 51 / FM 52exact
Spectrochem FE 51 / FE 52exact

**Specifications / Forms of delivery**

| | | 4.8 * | Spectro * | 5.0 | 5.7 * | 6.0 | |
|-----------------------------|---|--------|-----------|--------|---------|---------|----------------|
| Composition | | | | | | | |
| Ar | > | 99,998 | 99,998 | 99,999 | 99,9997 | 99,9999 | Vol.-% |
| Impurities | | | | | | | |
| H ₂ O | < | 4 | 2 | 3 | 1 | 0,5 | ppmv |
| O ₂ | < | 3 | 2 | 2 | 0,5 | 0,5 | ppmv |
| N ₂ | < | 10 | - | 5 | 1 | 0,5 | ppmv |
| THC (as CH ₄) | < | 0,2 | 0,2 | 0,1 | 0,1 | 0,1 | ppmv |
| CO + CO ₂ | < | 0,2 | 0,2 | 0,1 | 0,1 | 0,1 | ppmv |
| Cylinders / Contents | | | | | | | |
| F 05 200 bar | | - | - | 1,0 * | - | - | m ³ |
| F 10 200 bar | | 2,1 | 2,1 * | 2,1 | - | - | m ³ |
| F 20 200 bar | | 4,3 * | - | 4,3 * | 4,3 * | - | m ³ |
| F 20 300 bar | | 6,1 * | - | - | - | - | m ³ |
| F 50 200 bar | | 10,7 | 10,7 * | 10,7 | 10,7 * | 10,7 | m ³ |
| F 50 300 bar | | 15,3 | - | 15,3 | - | - | m ³ |
| B 12 * F 50 200 bar | | 128,6 | - | 128,6 | - | - | m ³ |
| B 12 * F 50 300 bar | | 183,4 | - | 183,4 | - | - | m ³ |

Remarks

Applications:
Shielding gas for special welding problems and sensitive materials (titanium, niob, tungsten, etc.)
Spark erosion spectrometry
Plasma processes
Filling gas for windows
Filling gas for lamps

*: not available in each country

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Description

Rare gas, colorless, odorless, heavier than air. In closed rooms the breathing air is displaced, no warning symptoms (danger of asphyxiation!).

Materials

Cylinders and Valves: any usual materials

Seals: PTFE, PCTFE, PVDF, PA, PP, IIR, NBR, CR, FKM, Q, EPDM

| Physical Properties | | | |
|-------------------------|-------------------|--|--|
| molecular weight | 39,948 kg/kmol | vapour pressure at 20°C | |
| Critical Point | | gas density at 0°C and 1,013 bar | 1,784 kg/m ³ |
| temperature | 150,86 K | density ratio to air | 1,3797 |
| Pressure | 48,98 bar | gas density at 15°C and 1 bar | 1,669 kg/m ³ |
| density | 0,5357 kg/l | Conversion Factor | |
| Triple Point | | liquid at Ts to m ³ gas (15°C, 1 bar) | 0,8352 |
| temperature | 83,80 K | Virial Coefficient | |
| Pressure | 0,6891 bar | Bn at 0°C | -0,96*10 ⁻³ bar ⁻¹ |
| Boiling Point | | B30 at 30°C | -0,61*10 ⁻³ bar ⁻¹ |
| temperature | 87,280 K; -186 °C | Gaseous State at 25°C and 1 bar | |
| liquid density | 1,3940 kg/l | specific heat capacity cp | 0,5216 kJ/kg K |
| evaporation heat | 161,3 kJ/kg | thermal conductivity | 178,2*10 ⁻⁴ W/m K |
| | | dynam. viscosity | 22,8*10 ⁻⁶ Ns/m ² |