



# Liquid Argon, High Tech Quality



**Application** The High Tech quality of liquid argon is used within the chemical industry as well as other high technology industries, primarily in bigger laboratories, where there is a need for large amounts of gas. The largest consumption of the High Tech quality in the laboratories takes place in connection with ICP- and ICP/MS-instruments, where the purity of the gas guarantees the quality of the ICP-plasma-flame.

**Physical properties** Liquid argon is a colourless liquid. In gaseous form, it is colourless, tasteless as well as odourless. Argon is neither flammable nor does it support combustion. Atmospheric air contains 0,934 vol. % argon and argon gas is approx. 1,4 times as heavy as air and is easily soluble in water. Argon forms part of the group of rare gasses together with helium, neon, krypton, xenon, which are all characterized by their extreme small reactivity with other substances. Argon does not form part of any known chemical combination. Argon is the most common of the rare gases. Atmospheric air is the only known source for production of pure argon. Liquid argon is produced from air via distillation in an air separation system.

**Specification** Material No. 104807. Product name: Liquid Argon, High Tech Quality

| Purity                     | Impurities  |
|----------------------------|---|
| Argon (Ar) ≥ 99,999 vol. % | Oxygen (O <sub>2</sub> ) ≤ 2 ppm                        |
|                            | Water (H <sub>2</sub> O) ≤ 3 ppm                        |
|                            | Nitrogen (N <sub>2</sub> ) ≤ 5 ppm                      |
|                            | Hydrocarbons (C <sub>n</sub> H <sub>m</sub> ) ≤ 0,2 ppm |

*The specifications are exclusively valid for deliveries in pressure tanks.*

| Physical data | Gas type       | Boiling point | Latent heat of vaporization | Specific heat capacity (15 °C) |
|---------------|----------------|---------------|-----------------------------|--------------------------------|
|               | Argon, Ar, LAR | -186 °C       | 164 kJ/kg                   | 0,52 kJ/kg K                   |

| Conversion factors  | Critical values   |
|---|---|
| 1 nm <sup>3</sup> = 1,168 litre = 1,637 kg                  | Critical temperature -122,3 °C                                    |
| 1 litre = 0,856 nm <sup>3</sup> = 1,401 kg                  | Critical pressure 49,0 bar  |
| 1 kg = 0,611 nm <sup>3</sup> = 0,714 litre                  | Critical density 0,536 kg/l                                       |
| 1 nm <sup>3</sup> = 1 m <sup>3</sup> at 15 °C and 0,98 KPa. | <i>The litre-designation is used for gas in its liquid phase.</i> |

Linde Gas  
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