

PRODUCT DATA SHEET

Dissolved Acetylene (C₂H₂)

Acetylene is a highly flammable colourless gas of distinct odour. The high solubility of acetylene in acetone (300:1 by volume at 1 100 kPa) enables it to be supplied dissolved in acetone. Acetylene cylinders are filled with porous material which carries the acetone.

Hazards

- A simple asphyxiant with anaesthetic properties
- Forms an explosive mixture with air
- Can form explosive acetylides with unalloyed copper, silver, mercury, brass containing more than 66% copper, and brazing materials containing copper and silver
- Can spontaneously decompose within equipment and pipework under certain flow, temperature and pressure conditions.

Classifications

Gas	Purity
Acetylene technical	99,0%

Material Description	Mass (kg)	Cylinder Capacity (l)	Pressure @ 20°C (Bar)	Valve Outlet Connection	Item Number
ACET TEC CYL 8,0 KG 12/10/5/2/ R 006	8,0	50,0	-	5/8" BSPF left hand female	15-DE
ACET TEC CYL PORTAPAK® 12/10/5/2/ R 006	0,94	5,6	-	5/8" BSPF left hand female	16-DA
ACET AGRIGAS 8,0 KG 12/10/5/2/ R 006	8,0	50,0	-	5/8" BSPF left hand female	17-DE
ACET AGRIGAS 6,9 KG 12/10/5/2/ R 006	6,9	40,6	-	5/8" BSPF left hand female	17-DC
ACET AGRIGAS 4,56 KG 12/10/5/2/ R 006	4,56	28,3	-	5/8" BSPF left hand female	17-DB
ACET TEC MCP 12 X 8,0 KG 12/10/5/2/ R 006	96,0	MCP	-	5/8" BSPF left hand female	15-MD12

Higher grades and purities of this product are available from Afrox
Specifications are included in the 'Special Products and Chemicals' section

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Physical Data

Appearance/odour	Colourless gas, ethereal when pure. Garlic when commercial
Molecular weight	26,038
Specific volume at 15,6°C and 101,325 kPa	900,8 l/kg
Boiling point at 170 kPa	-75°C
Critical temperature	35,2°C
Relative density (air = 1) at 101,325 kPa	0,908
Density, gas at 101,325 kPa and 0°C	1,1747 kg/m ³
Flammable limits in air (by volume)	2,0 - 82%

Uses and Features

- Acetylene is the best and most versatile fuel gas for welding, straightening, bending, forming, hardening, cutting or tempering. It is the hottest flame temperature when compared to MAPP gas, propylene and propane and natural gas (2,910°C, 2,895°C, 2,800°C and 2,780°C respectively)
- Acetylene is used as a fuel gas for oxy-acetylene welding, cutting, general localised heating, flame hardening, flame cleaning to remove rust from steel, spalling concrete and other processes requiring a high temperature flame (3,160°C when combusted in oxygen)
- Specially purified instrument grade acetylene which has such impurities (arsine, phosphine, ammonia and hydrogen sulphide) removed is used in atomic absorption, analytical instrumentation and navigational beacons.

Precautions in Use

- Fit and maintain flashback arrestors in equipment
- Keep hot work and sparks away from cylinder relief devices and hoses. Do not work directly above cylinders
- Use only approved equipment
- Do not use at pressure greater than 150 kPa
- Open cylinder valve slowly
- Close cylinder valve when not in use
- Cylinders should be secured from falling over
- Excessive flow rates may remove acetone from the cylinder
- Use personal protective equipment.

Material Compatibility

- Steel, stainless steel, aluminium and wrought iron are recommended for use with acetylene. Joints may be welded or threaded or flanged. The use of cast iron fittings is not permissible. Unalloyed copper, silver and mercury, brasses containing more than 66% copper and brazing materials containing copper and silver should never be used in direct contact with acetylene due to the possible formation of explosive acetylides. Ensure hoses and pipelines are compatible with acetone.

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