

ELECTRONIC GASES

DICHLOROSILANE SiH_2Cl_2

Dichlorosilane is a highly toxic, colourless, flammable and liquefied gas with a sharp, pungent odor. It hydrolyses on contact with water to form hydrochloric acid.

Container Information

| CYLINDER SIZE | CONTENTS | | Pressure@21.1°C Valve Outlet DOT Shipping Description: DOT Shipping Labels DOT Guide No. CAS Registry No. | 9 psig std: CGA-678 Dichlorosilane, 2.3, UN 2189 Poison Inhalation Hazard Hazard Zone B Poison Gas, Nonflammable Gas 29 4109-96-0 |
|---------------|----------|------|--|---|
| | LB | KG | | |
| 044 | 90 | 40.9 | | |
| 016 | 22 | 10 | | |

Specifications

| COMPONENT | ULSI | VLSI |
|-----------------------|--------------|--------------|
| DICHLOROSILANE | 99.9%min | 99.0%min |
| Typical Resistivity | > 400 ohm-cm | > 200 ohm-cm |
| Monochlorosilane | < 100 ppm | < 0.2 % |
| Trichlorosilane | < 200 ppm | < 0.5 % |
| Silicon Tetrachloride | < 100 ppm | < 0.1 % |
| Other Chlorosilanes | < 500 ppm | < 1 wt% |

SHELF LIFE: 2 years

Physical Properties

| | |
|--|---|
| Molecular Weight | 100.99 |
| Flammability Limits in air | 4.1-98.8% |
| Specific Gravity, | |
| Gas @ 70°F(21.1°C), 1 atm(Air=1) | 3.52 |
| Density, Gas @ 70°F(21.1°C), 1 atm | 0.26lbs/ft ³ (4.18kg/m ₃) |
| Specific Volume, Gas @ 70°F(21.1°C), 1 atm | 3.85ft ³ /lb (0.239m ₃ /kg) |
| Boiling Point @ 1 atm | 46.8°F (8.2°C) |
| Melting Point @ 1 atm | -187.6°F (-122.0°C) |
| Critical Temperature | 348.8°F (176.0°C) |
| Toxicity | |
| TLV-TWA | 5 ppm |

ULSI Metals Specifications

| ELEMENT | SYMBOL | TYPICAL |
|------------|--------|---------|
| Aluminium | Al | 1.0 |
| Arsenic | As | 0.2 |
| Boron | B | 0.1 |
| Carbon | C | 1000.0 |
| Iron | Fe | 50.0 |
| Phosphorus | P | 0.3 |

*all values in ppbw