



## Trichlorosilane (TCS). $\text{SiHCl}_3$

**Product information** Trichlorosilane is a silicon precursor for epitaxial silicon-containing thin films, especially for the preparation of starting wafers.

**Characteristics** Flammable. Colorless liquid with a sharp acidic odor. Highly corrosive in humid conditions. Vapor is heavier than air.

| Physical data                        | Molecular weight                         | [g/mol]           | 135.45                                 |                  |
|--------------------------------------|--|-------------------|--|------------------|
|                                      | Boiling point                            | at 1.013 bar [°C] | 31.9                                   | at 14.5 psi [°F] |
| Density                              | at 1.013 bar, 15 °C [kg/m <sup>3</sup> ] | 6.016             | at 1 atm., 70 °F [lb/ft <sup>3</sup> ] | 0.366            |
| Vapor pressure                       | at 0 °C [bar]                            | 0.29              | at 32 °F [psi]                         | 4.17             |
|                                      | at 20 °C [bar]                           | 0.66              | at 70 °F [psi]                         | 9.92             |
| Flammability range in air (% volume) | 1.2-90.5                                 |                   |  |                  |

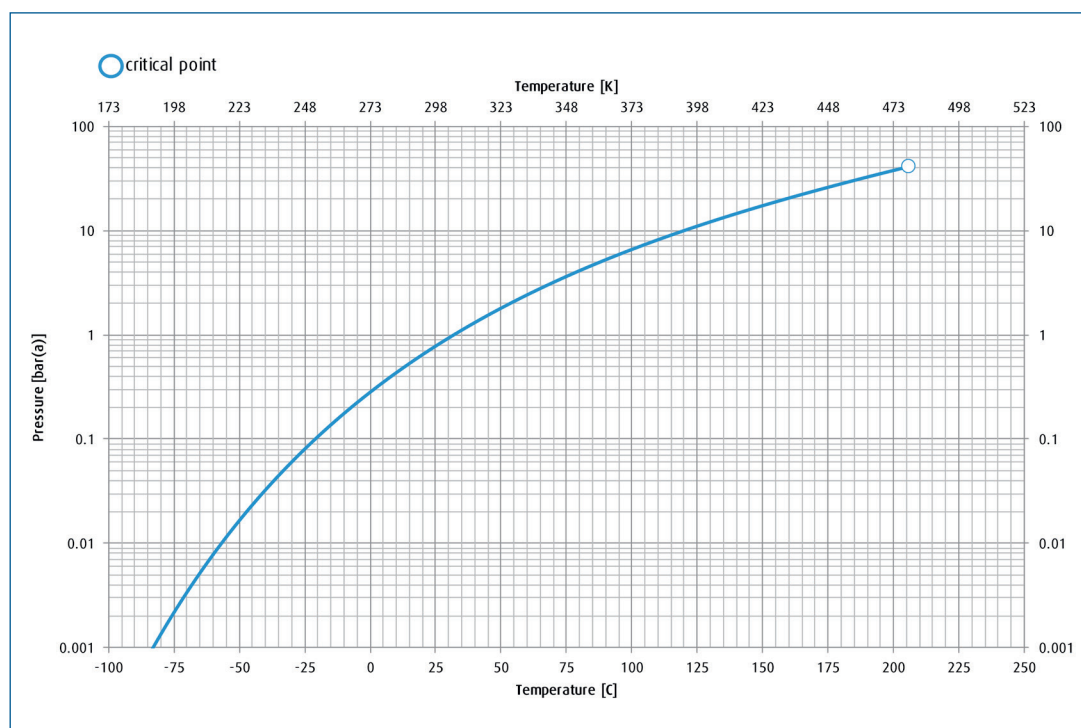
| Product specification | Purity grade | Typical purity | Typical impurities |              |              |              |         | Other Chlorosilane | Resistivity |
|-----------------------|--------------|----------------|--------------------|--------------|--------------|--------------|---------|--------------------|-------------|
|                       |              |                | C                  | Fe           | B            | P            | Donor   |                    |             |
| 3.7N                  | ≥99.97 %     | ≤5 ppm(a)      | ≤200 ppb(w)        | ≤0.12 ppb(a) | ≤0.07 ppb(a) | ≤0.07 ppb(a) | <0.03 % | >600 Ω/cm          |             |

| Shipping information | UN number | CAS number | EC number | DOT label                                       | Hazard labels required              |
|----------------------|-----------|------------|-----------|---|-------------------------------------|
|                      | 1295      | 10025-78-2 | 223-888-3 | Dangerous when wet, Flammable liquid, Corrosive | ADR Class 4.3, WFC<br>DOT Class 4.3 |

## Packaging information

|    | Package options | Cylinder designation | Cylinder internal volume | Cylinder material | Cylinder diameter | Cylinder height to valve outlet | Cylinder tare weight | Fill contents | Pressure (psig) @ 70° | Valve outlet <sup>(2)</sup>        | Valve material |
|----|-----------------|----------------------|--------------------------|-------------------|-------------------|---------------------------------|----------------------|---------------|-----------------------|------------------------------------|----------------|
| US | Liquid Drum     | L2800                | 1100L                    | Stainless Steel   | 48 in             | 58 in                           | 800 lb               | 2800 lb       | 10                    | 1/4" VCR- Gas<br>1/2" VCR - Liquid | SS             |
|    | Liquid Drum     | L1200                | 450L                     | Stainless Steel   | 32 in             | 56 in                           | 430 lb               | 1200 lb       | 10                    | 1/4" VCR- Gas<br>1/2" VCR - Liquid | SS             |
|    | Liquid Drum     | L600                 | 208L                     | Stainless Steel   | 24 in             | 55 in                           | 200 lb               | 550 lb        | 10                    | 1/4" VCR- Gas<br>1/2" VCR - Liquid | SS             |
|    | Liquid Drum     | L100                 | 38L                      | Stainless Steel   | 9 in              | 36 in                           | 60 lb                | 90 lb         | 10                    | 1/4" VCR- Gas<br>1/2" VCR - Liquid | SS             |
| EU | Liquid Drum     | 1100L                | 1100L                    | Stainless Steel   | 1200 mm           | 1475 mm                         | 360 kg               | 1200 kg       | 10                    | 1/4" VCR- Gas<br>1/2" VCR - Liquid | SS             |
|    | Liquid Drum     | 212L                 | 212L                     | Stainless Steel   | 600 mm            | 1150 mm                         | 95 kg                | 250 kg        | 10                    | 1/4" VCR- Gas<br>1/2" VCR - Liquid | SS             |

## Vapor pressure curve



## Additional information

The information, recommendations, and data contained in this publication are intended to give basic guidance for safe handling and use of gases. For more information, please refer to Safety Data Sheets. You can locate these through the [Linde Safety Data Sheet Search](#). It is essential for the safe use of gases that personnel are properly trained and are fully aware of the possible hazards. Further information and advice on any matter relating to the safe handling or use of these products may be obtained from the nearest Linde office.

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