

SEMI C3.36-94 (Withdrawn 0701) STANDARD FOR HYDROGEN CHLORIDE (HCl), 99.994% QUALITY (PROVISIONAL)

This Standard was technically approved by the Gases Global Technical Committee. Available at www.semi.org in July 2001; originally published in 1989; previously published in 1994.

NOTICE: This Document was balloted and approved for withdrawal in 2001.

1 Description

1.1 Hydrogen chloride is a colorless, pungent, corrosive gas having a suffocating odor. Hydrogen chloride is heavier than air and fumes strongly in moist air. It is very soluble in water and alcohol, and also soluble in ether. Hydrogen chloride is shipped as a liquefied compressed gas stored under its own vapor pressure. As long as liquid is present in the cylinder, the pressure will remain fairly constant. When the liquid phase is exhausted, the cylinder pressure will drop rather rapidly.

2 Specifications

QUALITY: 99.994% (See Notes 1, 2, 3)

<i>Impurities</i>	<i>Maximum Acceptable Level (ppm)^{#1}</i>
Carbon Dioxide (CO ₂)	10
Hydrocarbons C ₁ –C ₂	5
Hydrogen (H ₂)	10
Iron (Fe)	^{#2} wt. vapor phase
Nitrogen (N ₂)	16
Oxygen (O ₂) + Argon (Ar)	5
Water (H ₂ O) (v/v)	5
TOTAL IMPURITIES (excluding iron)	51

^{#1} An analysis of significant figures has not been considered. The number of significant figures will be based on analytical accuracy and the precision of the provided procedure.

^{#2} To be determined between supplier and user.

NOTE 1: Due to the reactive nature of the material and the impurities, this product should be used within a period which may be specified by the supplier.

NOTE 2: It is recommended that the user discontinue the use of a cylinder prior to complete consumption of the liquid phase because there may be increased impurities. The content of cylinders should be determined by weight, not pressure.

NOTE 3: This specification applies to the gas phase of the cylinder as received.

3 Physical Constants (for information only)

	<i>Metric Units</i>	<i>US Units</i>
Molecular weight	36.465	36.465
Boiling point at 1 atm	–85°C	–121°F
Density of gas at 21.1°C (70°F) and 1 atm	1.522 kg/m ³	0.095 lb/ft ³



	<i>Metric Units</i>	<i>US Units</i>
Specific gravity of gas at 32°F and 1 atm	1.2681	1.268

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