

# Tetrafluoro methane

# CF<sub>4</sub>

Carbon tetrafluoride R14

## Marking

CAS

Characterization acc. ADR

75-73-0  
UN 1982  
TETRAFLUOROMETHANE  
(REFRIGERANT GAS R 14),  
2.2, (C/E)

Cylinder Marking



Shoulder color: bright green

## Essential properties

liquified gas, heavier than air, colorless, odorless

Symbols of risks



## Physical Properties

molecular weight	88,005 kg/kmol
gas density at 0°C and 1,013 bar	3,946 kg/m <sup>3</sup>
density ratio to air	3,052
GWP (CO <sub>2</sub> = 1) acc.to 517/2014 (EU)	7390

For additional safety information see safety data sheet \*-CF4-116

## Valves / Manifolds

Valve connection

acc. to national regulations

Recommended Manifolds

Spectrolab FM 51 / FM 52exact  
UHP: Spectropur



Specification / receptacles		Tetrafluormethane	
<b>Composition</b>			
CF <sub>4</sub>	≥	99.2	Vol.-%
<b>Impurities</b>			
O <sub>2</sub> / N <sub>2</sub> / CO	≤	7,000	ppmv
C <sub>2</sub> F <sub>6</sub> / CO <sub>2</sub>	≤	1,000	ppmv
H <sub>2</sub> O	≤	50	ppmv
<b>Cylinder / Contents</b>			
F 50 32kg		32.0	kg

## Remarks

Tetrafluoro methane is a greenhouse gas acc. to EU 517/2014, annex 1, group 2.  
GWP = 7.390

**MESSER**   
Gases for Life

Messer Group GmbH  
Messer-Platz 1  
65812 Bad Soden

<https://www.messergroup.com>

# Tetrafluoro methane

# CF<sub>4</sub>

Carbon tetrafluoride R14

## Marking

CAS

Characterization acc. ADR

75-73-0  
UN 1982  
TETRAFLUOROMETHANE  
(REFRIGERANT GAS R 14),  
2.2, (C/E)

Cylinder Marking



Shoulder color: bright green

## Essential properties

liquified gas, heavier than air, colorless, odorless

Symbols of risks



For additional safety information see safety data sheet \*-CF4-116

## Description

Colourless, nontoxic gas. In low concentrations odorless, in higher concentrations slightly etheric odor. Chemically und thermic very stable.

## Materials

Cylinders and valves: any usual materials  
Seals: PTFE, PVDF, PA, PP

Physical Properties			
<b>molecular weight</b>	88,005 kg/kmol	<b>vapour pressure at 20°C</b>	
<b>critical point</b>		<b>gas density at 0°C and 1,013 bar</b>	3,946 kg/m <sup>3</sup>
temperature	227,6 K	<b>density ratio to air</b>	3,052
Pressure	37,4 bar	<b>gas density at 15°C and 1 bar</b>	3,688 kg/m <sup>3</sup>
density	0,630 kg/l	<b>conversion factor</b>	
<b>triple point</b>		liquid at Ts to m <sup>3</sup> gas (15°C, 1 bar)	
temperature	89,56 K	<b>virial coefficient</b>	
Pressure	0,00109 bar	Bn at 0°C	-4,9*10 <sup>-3</sup> bar <sup>-1</sup>
<b>boiling point</b>		B30 at 30°C	-3,4*10 <sup>-3</sup> bar <sup>-1</sup>
temperature	145,16 K; -128 °C	<b>gaseous state at 25°C and 1 bar</b>	
liquid density	1,6096 kg/l	specific heat capacity cp	0,6954 kJ/kg K
evaporation heat	134,20 kJ/kg	thermal conductivity	158*10 <sup>-4</sup> W/m K
		dynam. viscosity	17,41*10 <sup>-6</sup> Ns/m <sup>2</sup>

**MESSER**   
Gases for Life

Messer Group GmbH  
Messer-Platz 1  
65812 Bad Soden

<https://www.messergroup.com>