

Trifluoro methane UHP

CHF₃

Fluoroform R23

Marking

CAS

Characterization acc. ADR

75-46-7
UN 1984
TRIFLUOROMETHANE
(REFRIGERANT GAS R 23),
2.2, (C/E)

Cylinder Marking



Shoulder color: bright green

Essential properties

liquified gas, heavier than air, colorless, ethereal smelling

Symbols of risks



Physical Properties

molecular weight	70,014 kg/kmol
gas density at 0 °C and 1,013 bar	3,154 kg/m ³
density ratio to air	2,439
vapour pressure at 20 °C	41,842 bar
GWP (CO ₂ = 1) acc.to 517/2014 (EU)	14800

For additional safety information see safety data sheet *-CHF3-119

Valves / Manifolds

Valve connection

acc. to national regulations

Recommended Manifolds

Spectrolab FM 51 / FM 52exact
Spectropur



Specification / receptacles		Trifluoromethane UHP	
Composition			
CHF ₃	≥	99.995	Vol.-%
Impurities			
N ₂	≤	20	ppmv
O ₂ + Ar	≤	5	ppmv
CO + CO ₂	≤	10	ppmv
total acid (as HF)	≤	0.1	ppmv
H ₂ O	≤	2	ppmv
halogenated HC	≤	30	ppmv
Cylinder / Contents			
F 10 8kg Alu		8.0	kg
F 50 34kg Alu		34.0	kg

Remarks

Trifluoro methane is a greenhouse gas acc. to EU 517/2014, annex 1, group 1.
GWP = 14.800

MESSER 
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Description

Colourless, liquefied gas with etheric odor. Chemically and thermal very stable.

Materials

Cylinders and valves: all usual materials

Seals: PTFE, PVDF, PA, PP, IIR, NBR, CR, FKM, Q, EPDM

Physical Properties			
molecular weight	70,014 kg/kmol	vapour pressure at 20 °C	
critical point		gas density at 0 °C and 1,013 bar	3,154 kg/m ³
temperature	299,5 K	density ratio to air	2,439
Pressure	49,739 bar	gas density at 15 °C and 1 bar	2,946 kg/m ³
density	0,527 kg/l	conversion factor	
triple point		liquid at Ts to m ³ gas (15 °C, 1 bar)	
temperature	117,97 K	virial coefficient	
Pressure	6,1*10 ⁻⁴ bar	Bn at 0 °C	-9,7*10 ⁻³ bar ⁻¹
boiling point		B30 at 30 °C	-6,9*10 ⁻³ bar ⁻¹
temperature	191,2 K; -82,0 °C	gaseous state at 25 °C and 1 bar	
liquid density	1,460 kg/l	specific heat capacity cp	0,7297 kJ/kg K
evaporation heat	240,82 kJ/kg	thermal conductivity	76*10 ⁻⁴ W/m K (0 °C)
		dynam. viscosity	14,77*10 ⁻⁶ Ns/m ²