

R-227ea

1,1,1,2,3,3,3 – HEPTAFLUOROPROPANE CF₃-CHF-CF₃

GUARANTEED COMMERCIAL SPECIFICATIONS

STANDARD SPECIFICATIONS	LIMIT VALUE
Purity	≥ 99.5% weight
Water content	≤ 10 ppm weight
Non-condensable content (gas phase)	≤ 1.5 % volume
High boiling residues	≤ 0.01 % volume
Acidity (HCl)	≤ 1 ppm weight

MAIN APPLICATIONS

R-227ea is a hydrofluorocarbon (HFC) which can in some applications replace R-114 (CFC) whose production was stopped in the European Union on 31.12.1994.

It is particularly suitable for air conditioning systems which work in high temperature environments, high temperature heat pumps, and thermal collectors. Today it is replaced in new installations in some applications by R-1234ze.

R-227ea is also used as an extinguishing agent replacing "bromofluorocarbon" compound R-13B1 whose production was stopped in the European Union as of 31.12.1993.

OILS

Use a polyol ester (POE) oil.

R-227ea PHYSICAL PROPERTIES

Molar mass	g/mol	170.03
Melting point	°C	-126.8
Boiling point at 1.013 bar	°C	-16.35
Saturated liquid density at 25°C	kg/m ³	1388
Saturated vapour density at boiling point	kg/m ³	8.484
Vapour pressure at 25°C	bar	4.55
Vapour pressure at 50°C	bar	9.16
Critical temperature	°C	101.8
Critical pressure	bar	29.25
Critical density	kg/m ³	594
Latent heat of vapourisation at boiling point	kJ/kg	131.77
Thermal conductivity of liquid at 25°C	W/(m.K)	0.060
Thermal conductivity of vapour at 1.013 bar	W/(m.K)	0.013
Surface tension at 25°C	10 ⁻³ N/m	7.04
Viscosity of liquid at 25°C	10 ⁻³ Pa-s	0.239
Viscosity of vapour at 1.013 bar	10 ⁻³ Pa-s	0.012
Specific heat of liquid at 25°C	kJ/(kg.K)	1.182
Specific heat of vapour at 1.013 bar	kJ/(kg.K)	0.813
Cp/Cv ratio at 25°C at 1.013 bar		1.075
Flammability in air		Non flammable
Flash point		None
Classification NF-EN 378 / ASHRAE PE(S)R		A1 Category 2
Potential effect on ozone	(R-11 = 1)	0
GWP according to Regulation (EU) 2024/573 (F-Gas III) GWP (AR4 / AR6)	(CO ₂ = 1)	3220 3220 / 3600