

## Solstice yf – Comparison with R134a and CO<sub>2</sub>

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	Solstice yf	HFC-134a	CO <sub>2</sub>
<b>Physic-chemical properties</b>			
Molecular weight (g/mole)	114	102	44
Boiling point (°C)	-29.2	-26.2	-109.3 (sublimation)
Pressure at 20°C (bar)	5.8 <sup>1</sup>	5.7 <sup>1</sup>	57.3 <sup>2</sup>
Pressure at 90°C (bar)	30.2 <sup>1</sup>	32.4 <sup>1</sup>	Not defined

### Environment

GWP (Global Warming Potential)	<1	1,300	1 (per definitionem)
Fulfils requirements of MAC Directive <sup>3</sup>	Yes	No	Yes
ODP (Ozone Depletion Potential)	0	0	0
Atmospheric Lifetime	11 days	13 years	>500 years

### Safety

Applicability	Can be used safely with proper practices and training <sup>4</sup>	Can be used safely with proper practices and training	Can be used safely with proper practices and training
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<sup>1</sup> The switching cost from HFC-134a to Solstice yf are minimal due to the similar pressures of both substances.

<sup>2</sup> The high pressure required for CO<sub>2</sub> solutions makes even small leaks difficult to handle and requires different equipment and practices.

<sup>3</sup> The EU MAC Directive stipulates that vehicles must gradually be equipped with a refrigerant with a GWP of less than 150.

<sup>4</sup> See for “HFO-1234yf proven safe: Overview of third party studies” for a summary of the extensive testing of Solstice yf.