

Solstice® Propellant: Comparison with Common Propellants

Physical Properties and Regulatory Comparison (U.S. Only)

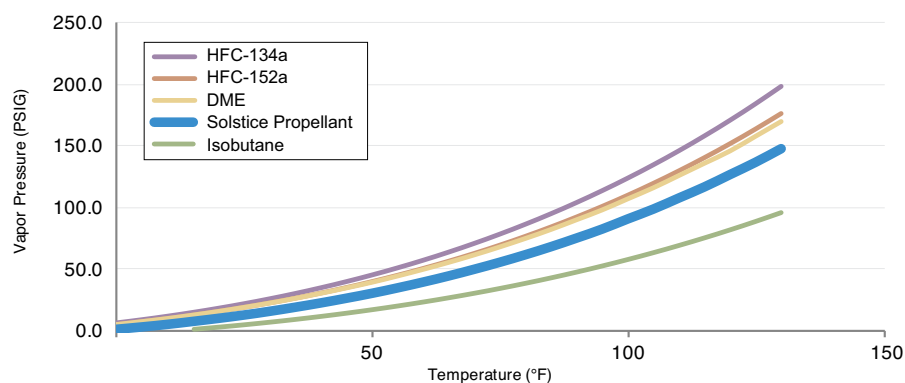
Requirement	Solstice® Propellant HFO-1234ze(E)	HFC-134a	HFC-152a	DME	Propane	i-Butane	n-Butane
Global Warming Potential (GWP) vs. CO ₂ , 100 year ITH ¹	<1	1300	138	1	3.3	3	4
Volatile Organic Compound (VOC) ²	No	No	No	Yes	Yes	Yes	Yes
Flammability ³	No	No	Yes	Yes	Yes	Yes	Yes
LFL / UFL ⁴ (Vol.% in Air @70°F)	NONE	NONE	3.9/16.9	3.4/18.0	2.2/9.5	1.8/8.4	1.9/8.5
Molecular Weight	114	102	66	46	44	58	58
Boiling Point (°F)	-2.2	-15	-13	-13	-44	11	31
Vapor Pressure (PSIG) @70°F (PSIG) @130°F	49 147	71 199	62 176	63 174	108 257	31 97	17 66
KB Value	12	9	11	60	15	18	20
Specific Gravity @70°F	1.17	1.22	0.91	0.67	0.51	0.55	0.58

¹ ITH; integrated time horizon. Data from Intergovernmental Panel on Climate Change (IPCC) report, 2013 (for Solstice Propellant/HFO-1234ze(E), HFC-134a, HFC-152a) and <http://www.epa.gov/ozone/snap/aerosol/list.html> (for DME, propane, i-Butane and n-Butane).

² VOC exempt status—U.S. EPA; California Air Resources Board (CARB)

³ ASTM E681 and ISO 10156 flammability testing

⁴ LFL/UFL; lower flame limit/upper flame limit



Physical Properties and Regulatory Comparison (Outside U.S.)

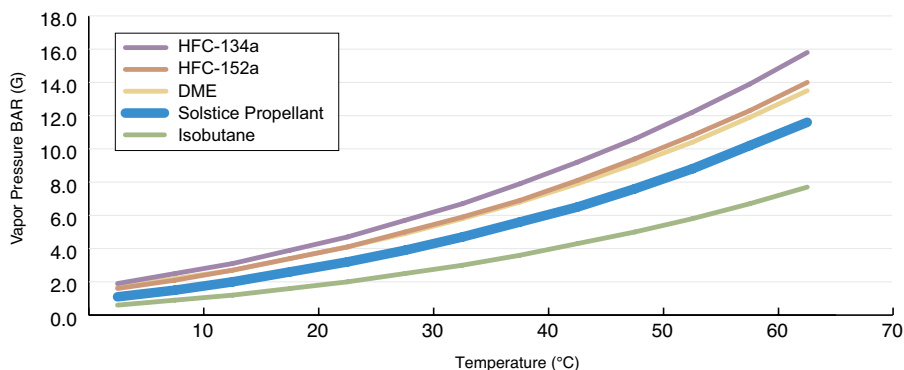
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Global Warming Potential (GWP) vs. CO ₂ , 100 year ITH ¹	<1	1300	138	1	3.3	3	4
Volatile Organic Compound (VOC) ²	No	No	No	Yes	Yes	Yes	Yes
Flammability ³	No	No	Yes	Yes	Yes	Yes	Yes
LFL / UFL ⁴ (Vol.% in Air @21°C)	NONE	NONE	3.9/16.9	3.4/18.0	2.2/9.5	1.8/8.4	1.9/8.5
Molecular Weight	114	102	66	46	44	58	58
Boiling Point (°C)	-19	-26	-25	-25	-42	-12	-0.5
Vapor Pressure barg @21.1°C barg @54.4°C	3.4 10.1	4.9 13.7	4.3 12.1	4.3 12.0	7.5 7.7	2.1 6.7	1.2 4.5
KB Value	12	9	11	60	15	18	20
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Contact Honeywell to Learn More

To learn more about the benefits of Solstice Propellant, call Honeywell at 1-800-631-8138 or visit www.honeywell-solstice-propellants.com

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