



# Solstice<sup>®</sup> Propellant: Comparison with Common Propellants

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

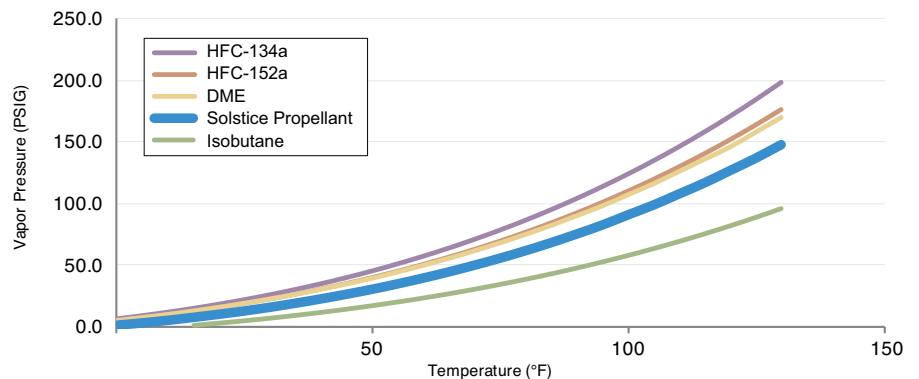
Requirement	Solstice <sup>®</sup> Propellant HFO-1234ze(E)	HFC-134a	HFC-152a	DME	Propane	i-Butane	n-Butane
Global Warming Potential (GWP) vs. CO <sub>2</sub> , 100 year ITH <sup>1</sup>	<1	1300	138	1	3.3	3	4
Volatile Organic Compound (VOC) <sup>2</sup>	No	No	No	Yes	Yes	Yes	Yes
Flammability <sup>3</sup>	No	No	Yes	Yes	Yes	Yes	Yes
LFL / UFL <sup>4</sup> (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	49	71	62	63	108	31	17
(PSIG) @130°F	147	199	176	174	257	97	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

<sup>1</sup> 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).

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

<sup>3</sup> ASTM E681 and ISO 10156 flammability testing

<sup>4</sup> LFL/UFL; lower flame limit/upper flame limit



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

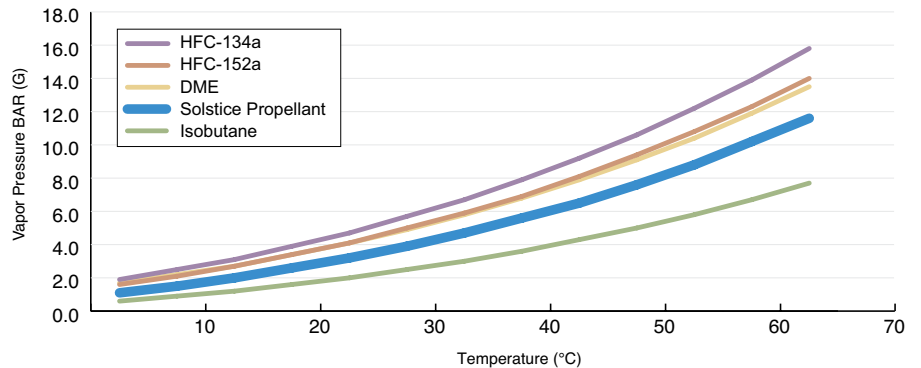
Requirement	Solstice® Propellant HFO-1234ze(E)	HFC-134a	HFC-152a	DME	Propane	i-Butane	n-Butane
Global Warming Potential (GWP) vs. CO <sub>2</sub> , 100 year ITH <sup>1</sup>	<1	1300	138	1	3.3	3	4
Volatile Organic Compound (VOC) <sup>2</sup>	No	No	No	Yes	Yes	Yes	Yes
Flammability <sup>3</sup>	No	No	Yes	Yes	Yes	Yes	Yes
LFL / UFL <sup>4</sup> (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
Specific Gravity @21°C	1.17	1.22	0.91	0.67	0.51	0.55	0.58

<sup>1</sup> 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).

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

<sup>3</sup> ASTM E681 and ISO 10156 flammability testing

<sup>4</sup> LFL/UFL; lower flame limit/upper flame limit



## 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](http://www.honeywell-solstice-propellants.com)

Although Honeywell International Inc. believes that the information contained herein is accurate and reliable, it is presented without guarantee or responsibility of any kind and does not constitute any representation or warranty of Honeywell International Inc., either expressed or implied. A number of factors may affect the performance of any products used in conjunction with user's materials, such as other raw materials, application, formulation, environmental factors and manufacturing conditions among others, all of which must be taken into account by the user in producing or using the products. The user should not assume that all necessary data for the proper evaluation of these products are contained herein. Information provided herein does not relieve the user from the responsibility of carrying out its own tests and experiments, and the user assumes all risks and liabilities (including, but not limited to, risks relating to results, patent infringement, regulatory compliance and health, safety and environment) related to the use of the products and/or information contained herein.

## Honeywell Fluorine Products

115 Tabor Road  
Morris Plains, NJ 07950  
1-800-631-8138



Solstice is a registered trademark of Honeywell International Inc.

2276 FP AT | January 2018  
©2018 Honeywell International Inc.

**Honeywell**