SAMPLE FORMULATION

Using Solstice® Enhance and Solstice® Propellant



Moisturizing Ice Cream¹

An ultra-cooling, moisturizing cream that spreads smoothly like butter to enhance your experience

Solstice Propellant (HFO-1234ze(E)), a breakthrough for aerosol-based products, and Solstice Enhance (HFO-1233zd(E)), a multifunctional solvent and carrier fluid, offer exciting possibilities for formulators. As nonflammable alternatives to hydrocarbons and high global warming potential (GWP) hydrofluorocarbons, they are non-ozone-depleting, VOC-exempt, with an **Earth-friendly** ultra-low GWP of one or less.

PHASE	TRADE NAME	INCI	WT%
Concentrate	DI Water	Water	83.4
	AHCOHOL™ 1618 TA	Cetearyl Alcohol	2
	DOWSIL™ 2503 Cosmetic Wax	Stearyl Dimethicone; Octadecene	3
	Olivem® 1000	Cetearyl Olivate; Sorbitan Olivate	4
	DOWSIL™ 9041 Silicone Elastomer Blend	Dimethicone; Dimethicone Crosspolymer	5
	XIAMETER™ PMX-1184 Silicone Fluid	Dimethicone; Trisiloxane	2
	euxyl® PE 9010	Phenoxyethanol; Ethylhexylglycerin	0.5
	Fragrance	Fragrance	0.1
		TOTAL	100
Aerosolized	Concentrate		42
	Solstice Enhance	Chlorotrifluoropropene	8
	Solstice Propellant	Tetrafluoropropene	50
		TOTAL	100

¹ Not for human consumption

FORMULATION PROCEDURE:

Pre-step: Chill Solstice Enhance (below 19°C) before combining with the formulation. Store in refrigerator.

Concentrate:

- In a main beaker, weigh Water and start heating to 70-80°C.
- In a separate beaker, weigh the oil phase (AHCOHOL 1618, DOWSIL 2503, Olivem 1000) and start heating to 70-80°C.
- 3. Once both phases are at 70-80°C, add the oil phase to the main beaker and homogenize for 1 min.
- Mix the batch with a paddle mixer.
 Cool down the batch to room temperature and then add the rest of the ingredients in the order of addition.
- 5. Homogenize the batch for 1 minute to ensure uniform mixing.

Aerosolized:

- 1. Fill liquid concentrate into aluminum/ plastic cans in the order of addition.
- 2. Add Solstice Enhance.
- 3. Crimp valve on can.
- 4. Charge with Solstice Propellant.
- 5. Shake the can vigorously until uniform.

² ASTM E-681, EU A11

³ Solstice Enhance: VOC-exempt (U.S. EPA), Solstice Propellant: VOC-exempt (U.S. EPA and CARB); negligible contribution to smog formation

For more information:

call 800-631-8138 (U.S. and Canada) or your local sales office.

www.hwll.co/personalcare

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