

COOL ULTRA-CRACKLING FOAM

SAMPLE FORMULATION

Using Solstice® Enhance
and Solstice® Propellant

UNIQUE MOISTURIZING FOAM WITH EXTRA COOLING AND ULTRA-CRACKLING SENSATION

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 nonflammable¹ alternatives to hydrocarbons and high global warming potential (GWP) hydrofluorocarbons, they are non-ozone-depleting, VOC-exempt,² with an Earth-friendly ultra-low GWP of one or less.



PHASE	TRADE NAME	INCI	WT%
Concentrate	DI Water	Water	68.6
	Natrosol™ 250 HX	Hydroxyethylcellulose	1.6
	Propylene Glycol	Propylene Glycol	0.8
	Tween™ 20	Polysorbate-20	0.6
	Solulan™ C-24	Choleth-24	2.4
	DOWSIL™ 9041 Silicone Elastomer Blend	Dimethicone; Dimethicone Crosspolymer	2.4
	XIAMETER™ PMX-1184 Silicone Fluid	Dimethicone; Trisiloxane	2.8
	euxyl® PE 9010	Phenoxyethanol; Ethylhexylglycerin	0.4
	Fragrance	Fragrance	0.4
	Ethanol 200 Proof	Alcohol Denat.	20
TOTAL			100

Aerosolized	Concentrate		23
	Solstice Enhance	Chlorotrifluoropropene	9
	Solstice Propellant	Tetrafluoropropene	68
	Total		100

¹ ASTM E-681, EU AII

² Solstice Enhance: VOC-exempt (U.S. EPA), Solstice Propellant: VOC-exempt (U.S. EPA and CARB); negligible contribution to smog formation

FORMULATION PROCEDURE

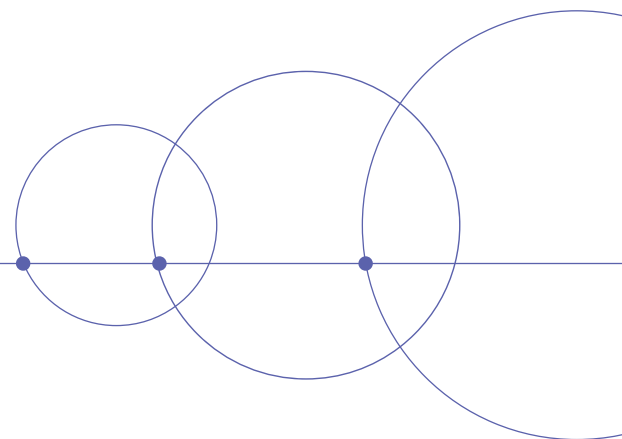
Pre-step: Chill Solstice Enhance (below 19°C) before combining with the formulation. Store in refrigerator.

Concentrate:

1. In a main beaker, weigh Water and Propylene Glycol.
2. Disperse Natrosol 250 HX in cold water with a paddle mixer and start heating to 70-75°C. Once it's dispersed, start adding Tween-20 and Solulan C-24.
3. While continually mixing, cool down the batch to room temperature and then add the rest of the ingredients in the order of addition.
4. 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.



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To learn more, contact us at:
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Solstice Advanced Materials Inc.
115 Tabor Rd. | Morris Plains, NJ 07950



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