

Sensates

Heat It Up & Cool It Down



THE CONCEPT:

Looking to add a new, surprising sensorial element to your formulation? The **Sensates** line of products provide either a cooling, warming or numbing sensation when used in topical cosmetic and personal care applications. We offer 4 products within the **Sensates** line; **Hotact® VBE** for a heating sensation, and **Coolact® 10**, **Coolact® P** and **Coolact® 38D** all with varying cooling profiles. These **Sensates** can perform alone or in combination to create different intensities and sensorials of cooling and warming effects. The Takasago **Sensates** are available exclusively from Vantage.

IDEAL FOR USE HOTACT®

- Skin treatment products
- Cleansers
- Facial mask
- Spa products
- Massage oils
- Shaving foams/gels/creams
- Body lotions
- Soaps
- Cleansing mask
- Lip balms

 **TAKASAGO**

Hotact® and Coolact® are a registered trademark of Takasago

IDEAL FOR USE COOLACT®

- Lip balms, sticks
- Facial tonics/balms
- Shaving products
- Body lotions
- Shower and bath gels
- Cleansing masks
- Shampoos and conditioners
- Hairstyling products
- After sun products
- Foot care products
- Spa treatment products
- AP/DEO

KEY BENEFITS

- Cooling effect (Coolact®)
- Heating effect (Hotact®)
- Skin penetration enhancer
- Immediate effect
- Rapid onset
- Little to no odor



 **Vantage**

ACTIVE INGREDIENTS



MECHANISM OF ACTION

Hotact[®] VBE is a stable ether and works directly by stimulating the receptors at the nerve endings to produce a heating sensation. There is no actual temperature change of the skin, but instead the nerves' neurotransmitters are triggered resulting in a perceived heating effect.

HOTACT[®] VBE AND CAPSICUM

Hotact[®] VBE was developed to overcome the inherent disadvantages of natural extracts used to generate warming effects. As a synthetically derived product, it is consistent in color, odor, and quality. **Hotact[®] VBE** is a pourable liquid and is easier to incorporate into personal care formulations than natural extract powders or concentrates, such as capsaicin or capsicum extract. On a molecular level, **Hotact[®] VBE** shares some structural similarity to capsaicin, however it is less irritating to the skin.

WHAT IS HOTACT[®]?

Hotact[®] VBE is a unique sensory agent that provides a warming effect to the skin. The effect of **Hotact[®] VBE** can be felt immediately upon application, building rapidly within the first five minutes and lasting up to two hours. Structurally similar to natural warming agents, it is less irritating than capsaicin or capsicum extract. Soluble in most solvents typically used in personal care formulations, this stable sensate ingredient is a colorless to pale yellow liquid with a slightly pleasant vanilla odor

SYNERGISTIC EFFECT WITH COOLING AGENTS

The cooling effect of **Coolact[®] 10**, menthol, and other cooling agents is enhanced when used in combination with small amounts of **Hotact[®] VBE**. When used in combination with **Coolact[®] 10** at a concentration of 0.01vt to 0.05%, **Hotact[®] VBE** dramatically increases and extends the cooling sensation. (Fig. 1)

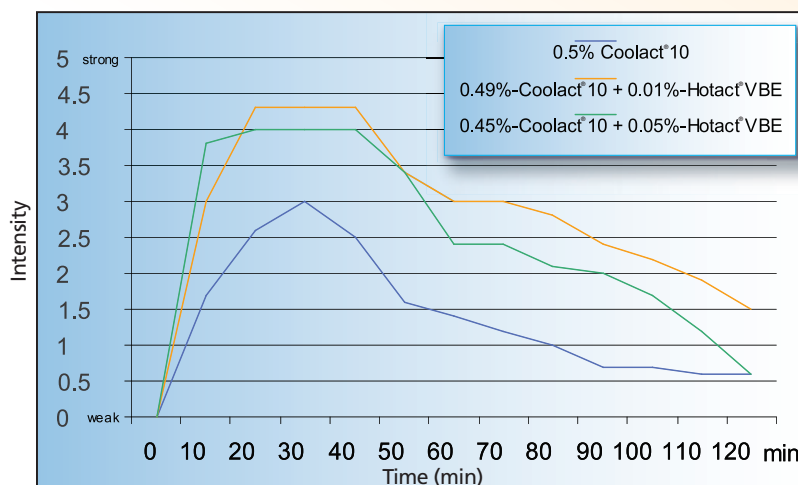
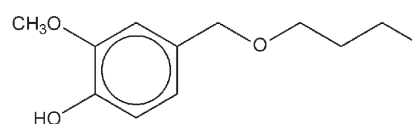
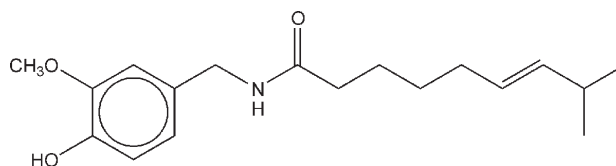


Fig. 1



WHAT IS COOLACT®?

Coolact® 10, **Coolact® P**, **Coolact® 38D** are sensory agents that provided pleasant cooling effects to the skin. The **Coolact®** products work by directly stimulating the receptors at the nerve endings of the skin to produce a cooling sensation. The skin does not actually change temperature, but instead the neurotransmitters are triggered, which sends a signal to the brain resulting in a perceived cooling effect. The **Coolact®** cooling effect is not a result of evaporation or degradation and they do not hydrolyze or decompose to menthol.

Coolact® 10 is odorless and provides a longlasting cooling effect which builds gradually during the first 20 minutes after application. Used separately or in conjunction with other sensory agents such as **Coolact® P**, **Coolact® 38D** or menthol, the cooling profile can be tailored to result in an immediate and heightened cooling effect that lasts up to 2 hours. Soluble in most solvents typically used in personal care formulations, this long-lasting, stable **Sensate** ingredient is completely colorless and odorless.

Coolact® P provides a rapid onset of cooling which does not last as long as the sensation from **Coolact® 10**. It can be combined with **Coolact® 10** to yield a mixture that gives both rapid-onset and long lasting cooling with minimal odor, **Coolact® 38D** also provides a rapid cooling effect with reduced odor compared to menthol. It is a good skin penetration enhancer, and thus can be combined with the other **Sensate** products to increase their ability to reach the sensory nerve endings, providing increased cooling efficacy.



COOLING PROFILE

The cooling effect of **Coolact® 10** gradually builds and peaks 20 to 30 minutes after application. Over 75% of subjects tested continued to detect the effect 60 minutes after application and the cooling sensation was still perceived after 2 hours. In comparison, menthol had a short, sharp cooling effect that peaked 10 minutes after application and diminished within one hour. The cooling profile can be tailored using a combination of **Coolact® 10** and menthol, as well as other sensate materials. Quick onset with an extended cooling effect can be achieved along with reduced odor compared to menthol alone. (Fig. 2)

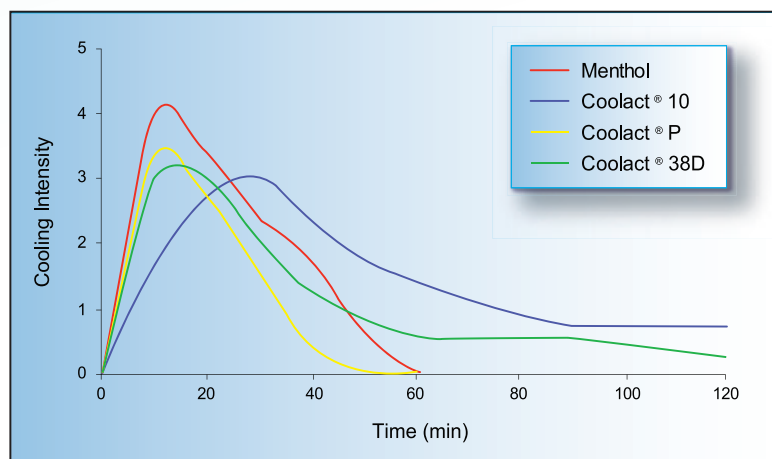
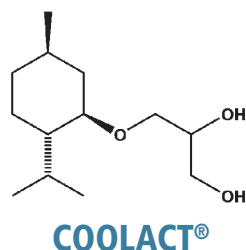


Fig. 2



SYNERGISTIC EFFECT WITH HOTACT® VBE

The cooling effect of **Coolact® 10** is further enhanced by the addition of small amounts of **Hotact® VBE**. **Hotact® VBE** typically produces a warming sensation, however, when used in combination with **Coolact® 10**, at a concentration of 0.01 to 0.05 %, it dramatically increases and extends the cooling sensation. (Fig. 1)

SENSATES® Heat It Up & Cool It Down



PRODUCT: Hotact® VBE **EINECS #:** 444-010-7 or 3-3828 (Japan)

INCI NAME: Vanillyl Butyl Ether **CAS #:** 82654-98-6

PRODUCT: Coolact® 10 **EINECS #:** 289-296-2/3-3857 (Japan)

INCI NAME: Menthoxypropanediol **CAS #:** 87061-04-9

PRODUCT: Coolact® P **EINECS #:** 232-102-8/201-940-6

INCI NAME: Isopulegol **CAS #:** 7786-67-6/89-79-2

PRODUCT: Coolact® 38D **EINECS #:** 255-953-7

INCI NAME: Menthanediol **CAS #:** 42822-86-6

TYPICAL PROPERTIES

	HOTACT® VBE	COOLACT® 10	COOLACT® P	COOLACT® 38D
Appearance	Colorless to pale yellow liquid	Colorless liquid	Colorless, clear liquid	Colorless liquid that solidifies at room temp.
Odor	Slight vanilla-like	Slightly minty	Slightly minty	Minty
Specific Gravity(20/25°)	1.052-1.072	0.992-1.004	0.908-0.914	0.976-0.982
Refractive Index (20°)	1.511-1.521	1.472-1.476	1.469-1.475	1.469-1.475
Assay (GC)	>98%	>98%	>99%	>99%
Solubility	Soluble in alcohol, organic solvents, mineral & vegetable oils	Slightly soluble in water soluble in alcohol & oils	Insoluble in water, soluble in alcohol & oils	Insoluble in water, soluble in alcohol, organic solvents, & vegetable oils
Recommended Use Level	0.2-1.0%	0.2-1.0%	1%	1%

All data, including the formulations and procedures discussed herein, to the knowledge of Vantage Specialty Chemicals, Inc. (Vantage), are believed to be correct, reliable and accurate. Please note, however, that Vantage does not warrant or guarantee any accuracy, reliability or completeness of the information contained herein. It is the user's responsibility to determine the suitability and completeness of such information for the user's particular use (including performing any necessary confirmatory tests). Vantage is not responsible or liable for any loss or damage that may occur from the use of this information, nor do we warrant against any patent infringement. Nothing contained herein shall be construed as providing any permission, recommendation, or inducement to practice any patented invention without permission of the patent owner.

ACTIVE INGREDIENTS