



LEVULINIC ACID IN FLAVORS AND FRAGRANCES

Naturally brimming with flavor and fragrance

- > In fragrances, levulinic acid has a creamy whiskey-like odour
- > In flavors, it is used in compositions to create caramel and maple flavors
- > Levulinic acid esters are used for a wide-range of fruity flavors and fragrances
- > In food applications, levulinic acid acts as a pH regulator for ingredients and inhibits microbial growth.

Enhance food and beverages using the distinctive characteristics of levulinic acid and esters.

Levulinic acid is a keto acid which is soluble in water, ethanol and diethyl ether. It is colorless and exhibits creamy aromas. As a food-grade preservative, it inhibits microbial growth, acts as a pH regulator for ingredients and can be a disinfectant for fruit surfaces.

In flavors, levulinic acid is commonly used to create caramel, maple and other syrupy flavors. For instance, it is used as a component in a range of berry-type compositions. Initially, it has a tart acid-like taste which is accompanied with caramellic flavors. This gives the impression of sweetness alongside acidity.

Levulinic acid esters are used for a wide-range of fruity flavors and fragrances. The ester, ethyl levulinate offers a valencene-like flavor. Valencene is extensively used in many beverages. It also blends well with cashmeran, which enables melon and pear notes.

Butyl levulinate, another ester, has an herbaceous odor with many savory applications. It can be used as both a flavor and a fragrance. The ester is useful for smokey notes and fruit applications such as melon, banana and cherry flavors.



PRODUCT SPECIFICATIONS

- > INCI name: Levulinic acid
- > CAS number: 123-76-2
- > FEMA Flavoring Substance Listing Number: 2627
- > Chemical name: 4-oxo-pentanoic acid
- > Synonyms: 4-oxovaleric acid
- > Shelf life: Store in tightly sealed containers in a cool, dark place for 12 months after date of manufacture.

Levulinic acid is a versatile building block for chemicals and materials derived directly from biomass.

ABOUT GFBIOCHEMICALS

Founded in 2008, GFBiochemicals uses breakthrough technology to commercialize levulinic acid – a valuable biobased building block for specialty chemicals and materials. With offices in Milan, Italy and Geleen, the Netherlands, its 10,000 MT/a commercial-scale production plant in Caserta, Italy came online in July 2015.



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