

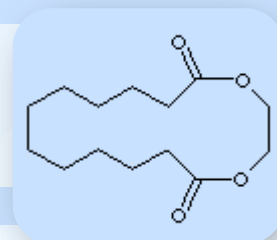
# MUSKONATE

## SYNONYMS

1,4-Dioxacyclohexadecane-5,16-dione; Cyclic ethylene dodecanedioate; Ethylene cyclic dodecanedioate; Ethylene dodecanedioate; Ethylenedodecanedioate; Musk C-14; Zenolide

## PRODUCT IDENTIFICATION

CAS RN	54982-83-1; 85024-16-4; 91462-24-7
EINECS RN	259-423-6
FORMULA	C <sub>14</sub> H <sub>24</sub> O <sub>4</sub>
MOLE WEIGHT	256.34



## PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	Colorless to pale yellow oily liquid
MELTING POINT	
BOILING POINT	154 – 156 C at 2 mmHg
DENSITY	1.055 - 1.065
SOLUBILITY IN WATER	Insoluble (soluble in alcohol, fixed oils)
pH	
VAPOR DENSITY	
REFRACTIVE INDEX	1.4620 - 1.4820
FLASH POINT	168 C

## STABILITY AND REACTIVITY

STABILITY	Stable under normal conditions.
INCOMPATIBLE MATERIALS	Acids, Bases, Oxidizing agents
DECOMPOSITION PRODUCTS	Carbon oxides, nitrogen oxides
POLYMERIZATION	Has not been reported
NFPA RATINGS	

## SAFETY

HAZARD NOTES	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Avoid release to the environment. Refer to special instructions/Safety data sheets.
EYE	Cause eye irritation.
SKIN	Harmful if absorbed through skin. Cause skin irritation.
INGESTION	Cause gastrointestinal irritation with nausea, vomiting and diarrhea.
INHALATION	Avoid breathing directly on the product.
CHRONIC	

## TRANSPORT & REGULATORY INFORMATION

UN NO.	3282
HAZARD CLASS	9
PACKING GROUP	III
HAZARD SYMBOL	N
RISK PHRASES	50/53
SAFETY PHRASES	61

## OTHER INFORMATION

Non-natural macrocyclic ethylene tridecanedioate (ethylene brassylate) and ethylene undecanedioate



# MUSKONATE

have pleasant and powerful musk-like odour. Ethylene tridecanedioate is used in perfumery under the trade names Astrotone (Dupont, Rhone Poulenc) and Musk T (Takasago Perf. Co. Ltd). The dilactone III was introduced into perfumery only a few decades ago and has grown to become one of the most important musk compounds to the perfumer. It is used extensively in perfumery as fixative, intensifier of sweet floral notes and in synthetic detergents. In all the reported syntheses<sup>6,16-18</sup> of ethylene brassylate and ethylene undecanedioate, the final step essentially remains the same, i.e. the conversion of the diacid to dilactone using ethylene glycol, which has been patented. Expectedly, much importance is given to the development of synthetic routes for the C13 diacid which is a synthon for ethylene brassylate and C11 diacid, which is a synthon for undecanedioate. Biotechnological methods are also gaining importance for the syntheses of these diacids. (source: <http://journal.library.iisc.ernet.in/>)

Application Information : Can be used in the creation of any perfume. Effective in floral and light accords, gives richness and body to fragrances. Blends well with animalic and warm woody notes. (source: <http://www.takasago.com/>)

Replacements of nitro- and polycyclic musks with macrocyclic musks: Several problems arise when replacing nitromusks or polycyclic with macrocyclic musks. First, the odor profiles (intensity, tonality, odor threshold, tenacity, etc.) are different. As a matter of fact, some nitromusks, e.g. musk ketone with its powdery sweet strong musky odor, are very difficult to replace, even by a mixture of compounds<sup>17</sup>. Secondly, some of the macrocyclic replacers do not show the same stability behavior in certain media (e.g. strong alkaline or acidic). Thirdly, some of them are simply too expensive to be used in low-cost functional products. Fragrance companies and perfumers will have to overcome these drawbacks with new inspirations. Upon increasing demand the desirable macrocyclic musks may become cheaper. Or - as a more distant possibility - new groups of musks will be found and launched in the future. (source: <http://www.thenose.ch/>)

## Macrocyclic Musks

Product	CAS RN.
Musk T	105-95-3
Exaltolide	106-02-5
Musk Ambrettolide	123-69-3
Exaltone	502-72-7
Muscone	541-91-3
Civetone	542-46-1
8-Cyclohexadecen-1-one	3100-36-5
Musk R1	3391-83-1
Cervolide	6707-60-4
Ambrettolide	28645-51-4
Musk Decenone	34902-57-3
Ambretone	37609-25-9
Muskonate	54982-83-1
(E)-12-Musk Decenone	111879-80-2

1,4-Dioxacyclohexadecane-5,16-dione is used as an ingredient in the creation of aromatic bases (Odor description: mild delicate musk, red fruit).

## SALES SPECIFICATION

APPEARANCE	Colorless to pale yellow oily liquid
ASSAY	95.0% min (GC)
SPECIFIC GRAVITY	1.055 - 1.065



# MUSKONATE

REFRACTIVE INDEX 1.4620 - 1.4820

**PACKING**

**PRICE**

