



Flexicare™ ZR-P

Zinc ricinoleate

Overview

- Naturally renewable odor neutralizer that traps and absorbs odors-not a masking agent
- High actives, low moisture zinc ricinoleate complex
- Solid form for compounding
- Soluble in most organic solvents, and in aqueous surfactant solutions
- Effectively complexes a wide range of low molecular weight highly odorous compounds
- Non-antimicrobial for compatibility with skin flora
- Compatible with fragrances and most Personal Care ingredients
- CIR Reviewed as non-toxic and for safe use in Cosmetics
- FDA listed (21 CFR §175.300) for use in the production of resinous and polymeric coatings used as the food-contact surface of articles intended for use in producing, manufacturing, packing, processing, preparing, treating, packaging, transporting, or holding food, in accordance prescribed conditions.
- INCI Name: zinc ricinoleate

Technical Information

Flexicare ZR-P is an odor neutralizer...not an antimicrobial or chemical masking agent. More effective than related copper and magnesium salts of the same valence, and related stearic and oleic acids of the same carbon number, Flexicare ZR-P zinc ricinoleate forms a unique fixating complex that traps and absorbs odor causing substances. Zinc ricinoleate is a zinc salt of ricinoleic acid, derived from zinc and a purified fatty acid from castor seed oil, a vegetable oil obtained from the seeds of the *Ricinus communis* plant.

Applications

- Deodorant agent in Natural deodorants
- Deodorant agent in personal cleansers and shampoos
- Anti-caking agent in granular and powdered products
- Opacifying agent for shampoos and cleansers
- Flow modifier in lipsticks and butters

Formulary

Flexicare ZR-P is a low melting solid ideal for compounding. It is soluble in a range of organic solvents and is soluble in aqueous surfactant mixtures.

Typical Properties

PROPERTY	VALUE
Appearance	White to tan solid
Odor	Mild
Ionic character	Anionic
Solubility	Soluble in most organic solvents
Water solubility	Dispersible with surfactants
pH, 1:1 IPA/H ₂ O	6-9
Density@25°C	1.00±0.02 g/cc
Melting range	70-80°C
Flash point	Does not ignite below 100°C
Storage	Stable under normal conditions
Shelf life	3 years

Packaging and Handling

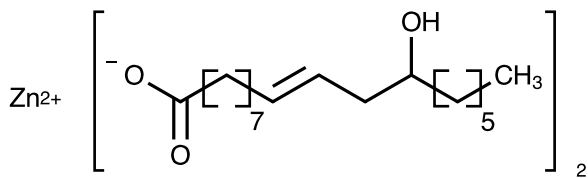
Flexicare ZR-P is available in 55 pound net weight bags

Refer to the Safety Data Sheet (SDS) for information on the safe use, handling, and disposal of this product

DOT Classification: Non-Regulated

Whether you're looking for a replacement product or an ingredient for a specific attribute, give us a call. We can provide assistance based upon your particular formulation requirements and composition; please feel free to contact us.

Please refer to back page for important information



Flexicare ZR-P Natural Odor Neutralizer

Flexicare ZR-P is a naturally renewable odor neutralizer that traps and absorbs odors...not an antimicrobial or chemical odor masking agent. Flexicare ZR-P is a zinc salt of ricinoleic acid, derived from zinc and a purified fatty acid from naturally renewable castor oil. Castor oil is obtained by the cold pressing of seeds of the *Ricinus communis* plant followed by clarification of the oil by heat. Often questioned, castor oil does not contain ricin because ricin is water soluble and does not dissolve in the oil obtained from the castor seeds. Purified castor oil is then naturally split into ricinoleic acid and glycerin for additional purification.

Castor oil is approved by the Food and Drug Administration as a natural flavoring substance, as a direct food additive, and as a safe and effective stimulant laxative. The derived ricinoleic acid and its zinc salts are CIR reviewed (Cosmetic Ingredient Review expert panel) and regarded for use as safe, non-toxic ingredients in a wide range of cosmetics and toiletries, and are FDA listed as Indirect Additives Used in Food Contact Substances (21 CFR §175.300).

Effective Odor Neutralization

The mechanism for odor fixation by Flexicare ZR-P is complicated, being a combination of adsorption, complex formation, and in some instances a chemical formation such as mercaptans to mercaptides. More effective than related copper and magnesium salts of the same valence, and related stearic and oleic acids of the same carbon number, Flexicare ZR-P zinc ricinoleate forms a unique fixating complex specific to the odor causing substances that cause intensive odor with low odor thresholds such as low molecular weight organic acids, amines, mercaptans, dialkyl sulfides, dialkyl disulfides, NH_3 , H_2S , and SO_2 .

When formulated into Personal Care deodorant products, zinc ricinoleate does not block pores or inhibit normal perspiration, and not being antimicrobial or antifungal, it will not interfere with the natural flora of the skin. Instead, zinc ricinoleate 'traps' the odor causing molecules produced by bacterial decomposition, such as TMHA (*trans*-3-methyl-2-hexenoic acid), in sweat so that they cannot be released with their characteristic sweaty smells.

Range of Application

Flexicare ZR-P traps, absorbs, and fixes odor-intensive organic substances. Substances with low odor thresholds with sulfur- such as thiols and thioethers, or nitrogen-containing functional groups such as ammonia and dimethylamine, and low molecular weight carboxylic acids such as isovaleric acid and hexenoic acid are effectively neutralized by Flexicare ZR-P. Flexicare ZR-P and the formulations that contain it effectively control a wide range of odorous compounds, including food and animal decomposition products such as putrescine and cadaverine, and industrial by-products such as hydrogen sulfide and sulfur dioxide and others.

Flexicare ZR-P is FDA food-contact approved (21 CFR §175.300) for use in the production of resinous and polymeric coatings used as the food-contact surface of articles intended for use in producing, manufacturing, packing, processing, preparing, treating, packaging, transporting, or holding food, in accordance prescribed conditions.

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