

## TECHNICAL DATA SHEET

# Oroyal™ Gamma Oryzanol

99%

### Chemical Properties

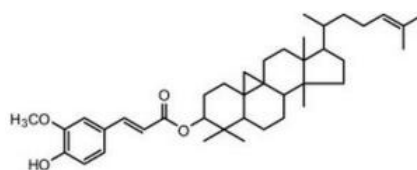
Chemical Name: Cycloartenyl Ferulate

CAS No.: 12738-23-7

INCI name: Oryzanol

Chemical Formula: C<sub>40</sub>H<sub>58</sub>O<sub>4</sub>

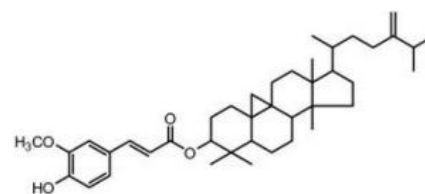
Molecular Weight: 602.89



Chemical Name: 24-Methylene cycloartenyl Ferulate

Chemical Formula: C<sub>41</sub>H<sub>61</sub>O<sub>4</sub>

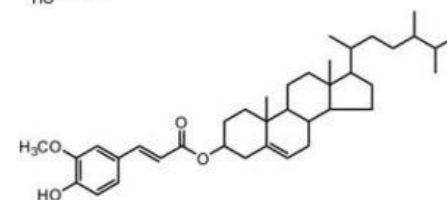
Molecular Weight: 616.93



Chemical Name: Campesteryl Ferulate

Chemical Formula: C<sub>38</sub>H<sub>56</sub>O<sub>4</sub>

Molecular Weight: 576.87



### Description

Gamma oryzanol is a mixture of substances derived from rice bran oil, including ferulic acid esters of sterols and triterpene alcohols. Cycloartenyl ferulate, 24-methylene cycloartenyl ferulate and campesteryl ferulate are the three major components and amount for 80 percent of gamma-oryzanol. Gamma Oryzanol is an antioxidant compound and is associated with cholesterol regulation, decreasing platelet aggregation, treating hyperlipidemia, treating disorders of menopause and increasing the muscle mass.

### Solubility

It is soluble in acetone, chloroform, sparingly soluble in ethanol, n-heptane, insoluble in water.

### Specification

| Item                | Specification               | Test Method  |
|---------------------|-----------------------------|--------------|
| Appearance          | White or Crystalline Powder | WS1-47(B)-89 |
| Odor                | Odorless                    | WS1-47(B)-89 |
| Assay               | 99.0%-102.0%                | WS1-47(B)-89 |
| Loss on Drying      | Max 0.8%                    | WS1-47(B)-89 |
| Residue on ignition | Max 0.2%                    | WS1-47(B)-89 |
| Heavy metals        | Max 10ppm                   | In-house     |
| Arsenic             | Max 1.0ppm                  | In-house     |
| Lead                | Max 1.0ppm                  | In-house     |

|                              |                |          |
|------------------------------|----------------|----------|
| Cadmium                      | Max 0.5ppm     | In-house |
| Mercury                      | Max 0.1ppm     | In-house |
| Total plate count            | Max 1,000cfu/g | In-house |
| Total Yeast & Mold           | Max 100cfu/g   | In-house |
| <i>E. Coli</i>               | Negative       | In-house |
| <i>Salmonella</i>            | Negative       | In-house |
| <i>Staphylococcus aureus</i> | Negative       | In-house |

## Ingredients

---

Pure Gamma Oryzanol

## Labeling

---

In the United States and the European Union: Oroyal™ Gamma Oryzanol 99%

## Applications

---

- a) Stabilisation of fats, frying oils and fried products
- b) Stabilisation and development of other food products,
- c) Functional food
- d) Athletic uses
- e) As sunscreen agent in cosmetic
- f) Pharmaceutical uses

## Safety

---

This product is safe for the intended use. Avoid ingestion, inhalation of dust or direct contact by applying suitable protective measures and personal hygiene. See Material Safety Data Sheet for full safety information.

## Handling recommendations

---

Do not ingest. Do not breathe dust. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep container tightly closed. Keep container in a cool, well-ventilated area.

## Packaging, Storage & Shelf Life

---

|            |  |
|------------|--|
| Package    | 20kg/drum; or according to customers' requirements.                      |
| Storage    | Store in a well-closed container away from moisture and direct sunlight. |
| Shelf Life | 3 years if sealed and stored properly.                                   |