

An oral formula of vanillin and wheat germ oil for treatment of mild and moderate COVID-19 viral disease: a randomized controlled trial

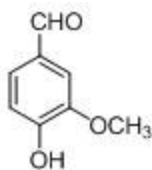
Annex 1

The source, specification and analysis methods of the studied capsules

Vanillin

1. Structure and Chemical name:

Chemical name is 3-methoxy-4-hydroxy-benzaldehyde, Chemical formula is $C_8H_8O_3$, and the Chemical structure is



2. Specifications: Confirm to GB 1886.16, BP, FCC, USP standard.

Appearance : White to pale yellow crystalline powder

Odor: Similar to Vanillin

Purity (by GC): $\geq 99.5\%$

Melting Point: $81.0 \sim 83.0^\circ\text{C}$

Solubility: 1g sample can completely soluble in 2ml 95% ethanol makes transparent solution

Loss on drying: $\leq 0.5\%$

Arsenic content: $\leq 3 \text{ mg/kg}$

Heavy Metal(Pb): $\leq 10 \text{ mg/kg}$

3. Uses : Vanillin can be used as food additive in making food ,wine and tobaccos, also it is a fine chemical product.

4. Packing and Expiry life: in 0.5 or 1 Kg tins, 25Kg cartons or 50 Kg iron drums, Expiry life is 3 years (under suitable storage condition)

Reference: https://www.zhhhg.com/en/productshow.php?cat_id=18&prod_id=129

Certificate of analysis

Product Name: Vanillin/Methyl Vanillin	Batch No.: 1320082302
Quantity: 1000kgs (500gram tin)	Mfg. Date: 2020.08.23
Test Date: 2020.09.21	Exp. Date: 2022.08.22

Specification	Standard	Test Result
Characteristics	Colorless to pale yellow crystal,crystal like powder	Conforms
Odour	With a strong vanilla aroma	Conforms
Assay content (%)	$\geq 99.0\%$	99.95%
Moisture	$\leq 0.5\%$	0.05%
Melting Range (°C)	81.0-83.0	81.3
Solubility (25°C)	1g sample dissolves the whole, or 3 ml 70% ethanol 2mL 95%	Conforms
Arsenic (as As) (mg/kg)	< 3	< 3
Heavy Metals (on Pb base) (mg/kg)	< 10	< 10
Conclusion	Complies with QB/T 1791-2006 & FCCIV	

Analyst:

陈建志

QC Manager:

丁再震

QA Manager:



WHEAT-GERM OIL, VIRGIN**Tritici aestivi oleum virginale****DEFINITION**

Virgin wheat-germ oil is the fatty oil obtained from the germ of the grain of *Triticum aestivum* L. by cold expression or other suitable mechanical means.

CHARACTERS

A clear, light yellow or golden-yellow liquid, practically insoluble in water and in alcohol, miscible with light petroleum (40 °C to 60 °C).

It has a relative density of about 0.925 and a refractive index of about 1.475.

IDENTIFICATION

- A. Carry out the identification of fatty oils by thin-layer chromatography (2.3.2). The chromatogram obtained is comparable with the typical chromatogram for wheat-germ oil.
- B. It complies with test for composition of fatty acids (see Tests).

TESTS

Acid value (2.5.1). Not more than 20.0, determined on 10.0 g.

Peroxide value (2.5.5). Not more than 15.0.

Unsaponifiable matter (2.5.7). Not more than 5.0 per cent, determined on 5.0 g.

Composition of fatty acids (2.4.22, Method C). The fatty-acid fraction of the oil has the following composition:

- *palmitic acid*: 14.0 per cent to 19.0 per cent,
- *stearic acid*: not more than 2.0 per cent,
- *oleic acid*: 12.0 per cent to 23.0 per cent,
- *linoleic acid*: 52.0 per cent to 59.0 per cent,
- *linolenic acid*: 3.0 per cent to 10.0 per cent,
- *eicosenoic acid*: not more than 2.0 per cent.

Brassicasterol (2.4.23). The sterol fraction of the oil contains not more than 0.3 per cent of brassicasterol.

Water (2.5.32). Not more than 0.1 per cent, determined on 5.00 g by the micro-determination of water. Use a mixture of equal volumes of *methanol R* and *methylene chloride R* as solvent.



Certificate of Analysis

Product WHEAT GERM OIL (REFINED)
LOT # 00302/20
Shelf Life 3 years

Properties	Specifications	Results
Appearance	Liquid	Conform
FFA (oleic acid)	≤ 0.5	0.1
Peroxide Value	≤ 5.0	1.3
Relative Density	0.915 – 0.930	0.927
Refractive Index	1.469 – 1.479	1.472
Iodine Value	120 – 140	134
Color	35 Y /2.5 R	30Y/1.7R
Saponification Value	180.0 – 195.0	190
Fatty Acid Profile (Area %)		
C16:0 Palmitic	11.0 – 18.0	12.8
C18:0 Stearic	≤ 4.0	3
C18:1 Oleic	15.0 – 30.0	22.8
C18:2 Linoleic	50.0 – 65.0	53.3
C18:3 Linolenic	2.0 – 8.0	5.8

This Certificate of Analysis was created by the manufacturer/distiller of the product. This information is believed to be up-to-date and correct; however, it is provided without any warranty. The customer is responsible for examining the product upon arrival and determining the safe use of the product in order to be in compliance with all applicable laws and regulations. The product must be stored in a cool, dry place away from direct light and heat, tightly sealed and away from children, the mentally infirm and pets. Essential oils shipped in amber plastic pharmaceutical grade bottles must be transferred to amber glass upon arrival, those shipped in aluminum bottles may be stored in such bottles for a minimum of 6 months, tightly sealed. All responsibility (including damage or injury) for the use of this and any other product purchased from Camden-Grey Essential Oils, Inc. rests with the purchaser/user. Camden-Grey's liability is limited to the paid value of this product.