



Cosmetics



Chemical Industry



Food Industry



Pharma

Kojic Acid

PRODUCT IN FOCUS

EXSYN®
ESSENTIAL CHEMISTRY

Kojic Acid

INTRODUCTION

Kojic acid is a natural fungal metabolite produced through natural fermentation of carbohydrates. It works primarily as a tyrosinase inhibitor, suppressing melanin production to help reduce dark spots and even out skin tone. It also delivers antioxidant benefits, neutralizing free radicals and protecting skin cells from oxidative stress. With its naturally weak acidic profile, kojic acid is a multifunctional ingredient suited for brightening and protective skincare formulations.

MANUFACTURE

Kojic acid is manufactured through aerobic fermentation of carbohydrate such as sugar, rice, etc. using fungal strains, primarily *Aspergillus* species. After fermentation, the crude undergoes cooling, concentration and decolorization to harvest refined kojic acid crystals.

APPLICATIONS

🔬 Cosmetics:

- Kojic acid is widely used in skin lightening and depigmentation products, typically at concentrations of 1% or less in creams, serums, lotions, and soaps.
- It is effective in addressing melasma, sun damage, acne scars, and age spots by inhibiting tyrosinase, the enzyme responsible for melanin formation.
- Its natural antimicrobial and antifungal properties further support the treatment of acne and fungal skin conditions.

🔬 Pharmaceuticals:

- In pharmaceutical applications, kojic acid is valued for its antioxidant, chelating, and antimicrobial properties, making it useful in formulations that target oxidative stress and microbial activity.

🔬 Food industry:

- Kojic acid serves as a precursor to maltol, a widely used flavor enhancer.
- It is also applied to cut fruits and seafood to help prevent discoloration, and functions as an anti-speck and anti-melanosis agent to preserve the visual quality of agricultural produce.

🔬 Chemical industry:

- Kojic acid is used in iron determination, as its reaction with trace ferric ions produces a distinctive deep red complex.
- It also serves as a key substrate in the chemical synthesis of comenic acid and 2-methyl-4-pyrone. Comenic acid being an important intermediate in maltol production, and 2-methyl-4-pyrone a compound associated with natural pigments.

Synonyms

2-Hydroxymethyl-5-hydroxy-4H-pyran-4-one, 5-Hydroxy-2-(hydroxymethyl)-4H-4-pyranone, 5-Hydroxy-2-hydroxymethyl-1,4-pyrone, 5-Hydroxy-2-hydroxymethyl-4-pyrone, 5-Hydroxy-2-hydroxymethylpyran-4-one

CAS no.

501-30-4

EINECS no.

207-922-4

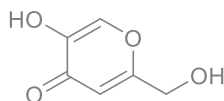
Molecular formula

 $C_6H_6O_4$

Molecular weight

142.11

Structure





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SPECIFICATIONS

Test	Unit	Specification
Appearance	-	White to off-white powder
Melting range	° C	93 - 95
Water content	%	NMT 1.0
Loss on drying	%	NMT 0.5
Residue on Ignition	%	NMT 0.5
Chromatographic purity (by HPLC)	%	NMT 97
Other total impurity	%	NMT 3
Assay (by HPLC) (On anhydrous basis)	%	NMT 95

STORAGE & PRECAUTION

Preserve in well-closed containers.

PACKING

Fibre drum

REACH STATUS

Not registered

ExSyn offers Kojic acid on commercial scales and welcomes enquiries. No matter the quantity you need, our exceptional quality and service will make ExSyn your supplier of choice! If you need any additional information or SDS, please contact us.