

# Formulating With Kojic Acid

[Kojic acid](#) is a by-product of the rice fermentation process, and works as a skin lightener by inhibiting melanin production in the skin. This helps to even out dark marks and pigmentation, resulting in a smoother and lighter skin tone.

## How To Use Kojic Acid

Recommended usage rate: EU regulations recommend a maximum usage rate of 1% in leave-on products.

Kojic acid is relatively easy to work with as it is water soluble. Simply dissolve it into warm water (not hotter than 35 degrees C or it may oxidise) and then it is ready for use! We recommend using [deionised water](#) to assist in keeping it stable.

However it is sensitive to heat, light and oxygen once activated, so be sure to keep any products you make with it in amber bottles that block out light and air.

Kojic acid is most stable at low pH levels (3.5 - 4.5), and will destabilise in alkaline conditions. So ensure your formulation is in the acidic range and all ingredients are compatible.

Kojic acid combines well with other antioxidants such as ascorbic acid, Vitamin E and ferulic acid, and these are recommended to use in conjunction with kojic acid to stabilise it. Kojic acid also works well with other exfoliating acids such as glycolic acid - just be careful to use other acids in the lower range so as not to irritate the skin.

Like most actives, kojic acid is most effective in a leave-on product for maximum exposure to the skin, however it can be used in rinse-off products as well.

Simple kojic acid solution to add into other products:

1% [kojic acid](#)

5% [deionised water](#) (may need to be gently heated)

Combine well.

Add to 94% of cream base or other water-based formula such as face/body wash, serums, toners or masks. For best results, combine with antioxidants such as ferulic acid and/or Vitamin E.

### **Kojic Acid Moisturiser**

This is an advanced formula that utilises high end ingredients: kojic acid, ascorbyl palmitate, ferulic acid, and Vitamin E, for a real power-packed product.

#### *Heated water phase*

0.5% [ferulic acid](#)

66.5% [deionised water](#), heated

#### *Heated oil phase*

20% [oil of choice](#)

4% [Olivem 1000](#)

0.5% [lecithin](#)

1% [ascorbyl palmitate](#)

0.5% [Vitamin E](#)

#### *Cool down phase*

1% [kojic acid](#)

3% [deionised water](#)

1% [Geogard 221](#)

Three [beakers](#)

[Spatula](#) or silicone spatula

Immersion/stick blender

Thermometer

[pH strips](#) or digital pH meter

In one beaker, weigh out the deionised water and ferulic acid. It won't completely dissolve so don't worry if there is some residue at the bottom.

In another beaker, weigh out and melt the oil phase ingredients.

In the last beaker, prep the kojic acid solution by mixing the kojic acid with the deionised water.

Make sure the heated water phase and heated oil phase ingredients are both at about 75-80 degrees. Add the oil phase into the water phase and blend with high shear until emulsified. Then stir while cooling down.

Once the emulsion has cooled to below 40 degrees, add in the kojic acid solution and the preservative. Give it a short burst with the blender to fully combine.

Check the pH and adjust if required (mine didn't need any adjusting).

Decant into a dark glass pump bottle to prevent light and oxygen getting in.

Please use sunscreen when using products containing kojic acid.