

Addendum - 1-methylcyclopropene (1-MCP)

Source of the substance and a detailed description of its manufacturing or processing procedures: The petition mentions that 1-MCP is always complexed with a sugar from a fermentation source call alpha cyclodextrin.

a. Please submit supporting documentation that this sugar is non-synthetic from a fermentation source.

According to the supplier, alpha cyclodextrin (α -CD) is a polysaccharide of six glucose units and is produced via fermentation using cyclodextrin glycosyltransferases (CGTase, EC 2.4.1.19, CAS 9030-09-5) on starch. CGTases are amylolytic enzymes produced naturally by *Escherichia coli* K12, which is a nonpathogenic and nontoxic host organism, harboring the CGTase gene of *Klebsiella oxytoca*. The isolation of α -CD from the enzymatic reaction mixture is carried out by a solvent process using 1-Decanol followed by dissolution in water and re-precipitation. Further purification is carried out by decantation and steam distillation.

b. Please confirm whether 1-MCP occurs in nature.

1-MCP, in its current form does not exist in nature as it has a very short half-life and decomposes in sunlight. It is the combination of 1-MCP with the alpha cyclodextrin sugar that gives the 1-MCP enough stability to be able to be used in the closed apple storage rooms.