

Aqueous Immersion

Background:

Since early of 2003, The Lupo CS-100 has successfully conducted tens of field tests for crops and cultivars. The feedbacks from end-users are very positive, major in three aspects: easy to use, good performance, and cost effective.

The product passed stability test for a time span of more than 36 months, and the continuous quality monitoring system was implemented on batch production basis. Thus we can guarantee the shelf life for 2 – 3 years.

The typical 1-MCP treatment is by gaseous “fumigation”. CS-100 is designed to simplify the treatment process, by just spraying. Even though, the responses from industries clearly showed restrictions in applications and generated many inconveniences for end-users with additional work load.

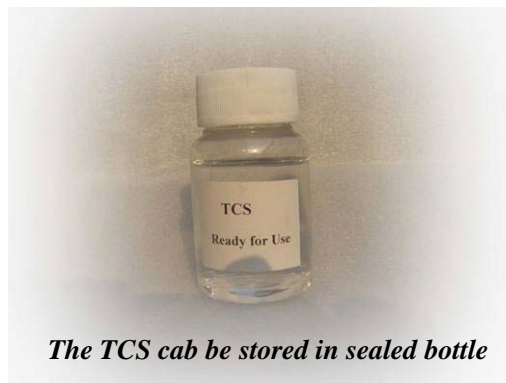


New Solution – Aqueous Immersion

In addition to the fumigation, with the same product CS-100, now we are able to make the 1-MCP gas dissolved into the water, using the aqueous solution of 1-MCP for treatment by “dipping” or “surface spraying”. The treating time requires merely “by minutes”, not anymore “by hours”.

Procedures to Form the Aqueous Solution:

- 1): Injecting the Lupo CS-100 into the prepared “Absorbent” (ABT) at an expected dosage to get the “1-MCP in the Absorbent” (TCS).
- 2): Pouring the TCS into the water tank, stirring gently, to get the 1-MCP Aqueous Solution (FTI) at the expected Nominal Rate of 1-MCP.
- 3): As the stability tests both in fields and at laboratory, the FTI can be at high stability for certain period, at the concentration ranged from 0.8 – 5.0 $\mu\text{g/L}$.



The FTI can be applied either for crops’ dipping, or by spraying on the surface of crops. This brings a significant flexibility in 1-MCP technology, with explosive results in dealing with ethylene issues. Although, we have conducted several successful tests both in fields and at laboratory, we would believe that the eventual scope of applications can be far beyond our current knowledge.

Safety Considerations for Aqueous Immersion

The Absorbent (ABT)

The absorbent is a popular food additive, widely applied in food industries, thus non-toxic.

The CS-100 Formulation

All ingredients applied in the formulation are either from food additives or from oral medicines. Therefore, these are non-toxic.

The Purified Gas 1-methylcyclopropene

We applied a state-of-art synthetic process - effective, high purity, and to fully integrate into the on-line purification. Nevertheless, with a specially designed module for taking out the harmful impurities integrated into the system, we are able to minimize the negative impacts at an acceptable level.

The Water

Any kind of water, except chlorinated one, for agricultural irrigation can be suitable for FTI's application.

Why we can? - A Compressed Spray Formulation!

- At very high stability across 3-yrs Shelf Life
- > 87% Water Based Formula
 - It makes the 1-MCP easily dissolved into Water
- A reliable Absorbent
 - non-toxic, and not harmful to the Plants
- Can accurately manage the Dosage
 - both for Laboratory Tests & Industrial Application

Applications

Dipping with FTI:

It is suitable for species which need surface cleaning, and the 1-MCP treatment can possibly be combined with the cleaning process.

Surface Spraying with FTI:

Move the FTI into the spraying tank, spraying on the surface of targeted crops. Specific crops are: cut flowers, potted flowers, potted plant, or even the pre-harvested fruits.



Comments

With the efforts of hundreds of scientists in the world, the effectiveness of 1-MCP for preventing crops from ethylene attacks has been fully proved. However, as the new front of agricultural science been actively exploring, and on the way to fully utilize this technology, it requires tremendous expertise which is far beyond our capability!



We are not the experts of crops growing, neither largely owned the knowledge across thousands of agricultural affairs, but dedicated into the technology of 1-MCP (and other ethylene related fields) for the fresh-keeping. We would like to sincerely work with anyone who possessed the expertise and ideas of agricultural technologies, and eventually to bring real benefit to the Growers worldwide.

