



Applications or Usages of Distilled Monoglyceride (Pro-Tex 1405MS)

Anti-staling, emulsifying, softening texture, shelf-life

Monoglycerides or Monoacylglycerols are variously produced by biological or industrial chemical processes.

Pro-Tex 1405MS is a distilled monostearate glyceride, using the commercial raw materials of palm oil.

Monoacylglycerols are useful as emulsifiers, helping to mix ingredients such as oily materials and water that otherwise would blend poorly. Applications can be found in the table. It is an acceptable ingredient in the whole foods

| Applications of Pro-tex™ 1045MS | | Benefits | Suggested Dosages |
|---------------------------------|---------------|--|----------------------|
| Protein Beverage | | Stabilize the fat and protein, prevent separation, and sedimentation. | 0.05 to 0.1% |
| Ice cream | | Avoid forming larger ice crystals, Improve mouth feel, and provide creamy texture | 0.1 to 0.2% |
| Bakeries | Bread | Improve crumb softness, reduce staling rate, inhibit starch retrogradation | 0.3 to 0.8% of flour |
| | Cakes | Improve volume, improve texture, and prolong shelf-life | 3 to 10% of the oil |
| | Biscuits | Improve process properties, prevent oil separating out, and make dough easy coming off the modules | 1.5 to 2% of the fat |
| Oil and fats | Margarine | Adjust the fat crystals, impart fine and stable water dispersion in fat. | |
| | Shortening | Adjust the fat crystals, and improve its shortening function property | |
| | Peanut butter | Improve stabilization | 0.1 to 0.2% |
| Coffee whitener | | Improved whitening effect | |
| Confectioneries, toffees | | Reduce stickiness and sugar crystallization | 1.5 to 2.0% of oil |
| Chewing gums | | Improve texture, soften gum basis | 0.3 to 0.5% |
| Meat products | | Help fat disperse, combines water and starch, prevent starch retrogradation | 0.1 to 1.0% |
| Edible anti foaming agents | | Decrease or inhibiting foaming | 0.1 to 1.0% |
| Granular potato products | | Ensure uniformity, improve texture | 0.1 to 1.0%starch |

Labeling: mono and diglyceride.

Method of Application: next page

Methods of Application of Distilled Monoglycerides, Pro-Tex 1405MS

There are 3 basic ways as to how to use this ingredient in various food applications.

Method 1 for oil based products: Mix together with melted fat, and then mix with the rest of formulation. This method is applicable to margarine, cakes oil products, since the distilled monoglycerides soluble in oil.

Method 2 for low moisture content: mix directly the distilled monoglycerides powder and other raw material powder (such as flour, milk powder), then feed them to next process step.

Method 3 for forming hydrates, for later usages, following these steps:

3.1. (this step is optional), A portion of the distilled monoglycerides was placed in a container, and was heated directly to melt it into hot water.

3.2 Hot water of 70 °C, or higher was stirred with a good mixer, forming a thick liquid (see Photo 1).

3.3. The melted liquid distilled monoglycerides, or the powder monoglyceride, are slowly added to the stirred hot water, which can generate cream hydrates paste. Cooled to room temperature and set aside for later use. See Photo 2&3.



Photo 1(left), shows a ratio of 40 g distilled monoglyceride with 150 g of water. Pro-Tex1405MS to Water can be 1: 3~5. Photo 1 shows the ratio of roughly 1:4

Photo 2 & 3 (lower), shows the formed **hydrate**, in a cream paste state, after cooling.

This paste (at 40:150 Pro-Tex 1405MS:Water) can be stored at room temperature for later applications in various products.

