Transglutaminase

(Meat Glue)

26 Lyerly St. Houston, TX 77022 713-691-2935 800-356-5189 Fax: 713-691-3250

Transglutaminase (TG), Also called meat glue, is a naturally occurring enzyme in plants, animals and bacteria that has the ability to "glue" protein-containing foods together. TG acts as a catalyst, binding protein molecules together, with a very strong covalent bond, by linking the amino acids glutamine and lysine.

In meat products, for example, it can help hold bacon around a filet mignon to create a bacon wrapped filet or it can help hold several smaller cuts together to make a larger cut that can be sliced. In the

Think of a whole beef tenderloin. It has a pointed end and a thicker end – much like a cone. The disadvantage of this is that when slicing and serving tenderloin, it's difficult to serve the same size portion. By laying tenderloins on top of one another going in opposite directions and using TG, two tenderloins can be made into a larger, cut of meat with a uniform diameter. The product can then be portioned to a standard serving size and cooked for a more consistent and enjoyable eating experience.

Because transglutaminase binds several smaller pieces together, products that use it will be labeled as "chopped" or "formed." These products need to be cooked like a ground product to 160 degrees F

Primary uses of transglutaminase include:

- Making uniform portions that cook evenly, look good, and reduce waste.
- Binding meat mixtures like sausages without casings.
- Making meat combinations like bacon and scallops.
- Producing special effects like meat noodles, meat and vegetable pastas, etc.

Additionally, TG can

- Thicken egg yolks
- Strengthen dough mixtures
- Thicken dairy systems
- Increase yield in tofu production, among other applications

Unfortunately, with the nickname "meat glue", it can cause transglutaminase to be perceived as un-natural or un-healthy. Transglutaminase is safe. It will not harm you. TG is deactivated by most cooking techniques and imparts no off-flavors to foods. The U.S. Food and Drug Administration (FDA) recognized transglutaminase as safe and it has been safely used for many years. Canada, Australia and many of European countries also recognize this as a safe food processing aid. Transglutaminase is not classified as an allergen. Still, when it is used, it will appear on the ingredient label.

Note: Unopened packages have a shelf life of about two years, however, Transglutaminase enzymes degrade quickly once exposed to oxygen. To avoid waste, we recommend buying professional packages only if you plan to use a large quantity in a relatively short time.

A 2 oz. package contains enzyme for 12-15 lbs. of product.

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RM Transglutaminase - Ingredients: sodium caseinate, maltodextrin, transglutaminase

RM is the most popular TG formulation used by chefs. In addition to transglutaminase and maltodextrin, it contains a water soluble milk protein called sodium caseinate. This helper protein compensates for any protein deficiencies by sticking to the surface of the food and bonding with the TG. This makes Activa RM ideal for difficult foods, including cooked meats. And there is no downside to including sodium caseinate, even if the application doesnt require the extra bonding power that it provides. So Activa® RM is your best bet for most meat glue recipes.

RM can be sprinkled on dry as a powder. It can be mixed into a slurry with 4 parts water. It can also be added directly into ground meat mixtures. Typical usage is 0.75 1.0% of formula weight.

GS Transglutaminase - Ingredients: sodium chloride, gelatin, trisodium phosphate, maltodextrin, transglutaminase, safflower oil.

GS is a mixture of transglutaminase, maltodextrin, and gelatin, with the addition of polyphosphate salts and oil. The preparation is always combined with water to make a slurry, which is alkaline or basic due to the polyphosphates. Since the TG enzyme is inactive at high pH, the slurry remains stable until it is applied to the meat. At that point, the pH drops, activating the enzymes, and the bonding begins. Unlike other TG preparations, Activa® GS has the advantage that it can be left out on the counter all day without going bad.

GS is always mixed into slurry with 4 parts water. Typical usage is 0.75 1.0% of formula weight.

TI Transglutaminase - Ingredients: maltodextrin, transglutaminase.

TI is just transglutaminase and maltodextrin with no added helper protein. It contains twice the enzyme level as RM or GS. However, it will not bond as wide a range of foods as the other preparations.

TI can be sprinkled on dry as a powder. It can be mixed into a slurry with 4 parts water. It can also be directly added into ground meat mixtures. Typical usage is 0.75 1.0% of formula weight.