

# Monosodium Glutamate (MSG)

Many people are concerned about the possible health impact of MSG, a widely used and safe food additive that is derived from a naturally occurring amino acid. This fact sheet explains what MSG is, where it comes from, and who needs to limit MSG in their diet.

## What is MSG?

MSG is a food additive. Its full name is monosodium glutamate and it comes from the amino acid glutamic acid. Amino acids are the building blocks of protein; our food and bodies contain protein that, in turn, contains glutamate. Glutamate is therefore found in a wide variety of foods.

## Why is it used?

Glutamate helps enhance the flavour of food, and therefore glutamate is often deliberately added to foods — either as MSG, hydrolysed protein or a variety of food ingredients rich in glutamates, such as cheese, tomato pastes, stocks and sauces.

MSG cannot improve inferior quality food or make up for poor cooking practices. It does not allow a cook to substitute low-quality for high-quality ingredients in a recipe, and does not tenderise meat. MSG simply enhances the savoury flavours already present in food.

## Where does it come from?

Glutamate is found in abundance in virtually all natural foods - from meat, poultry, fish, cheese and milk (including human breast milk) to tomatoes, mushrooms and many other vegetables. Glutamate is the most commonly found amino acid in nature, the average diet provides between 10 grams to 20 grams of bound glutamate (bound in protein) and 1 gram of free glutamate (not bound in protein). Glutamate can also be manufactured as MSG.

## How is it made?

Japanese cooks for the past 1000 years have known that certain foods tastes better when prepared with a soup stock made from a type of seaweed — *Laminaria japonica*. But it was only in 1908 that Japanese scientists identified what it was in the seaweed that

was enhancing flavour, creating monosodium glutamate or MSG.

Like many foods today monosodium glutamate is produced through fermentation, a process used in making beer, vinegar, soy sauce and yogurt. The process begins with natural products such as molasses from sugar cane or sugar beets and food starch from tapioca or cereals, which are fermented in a controlled environment.

## Is MSG different from glutamate?

The human body treats MSG the same as natural glutamate found in food. For instance, the body does not distinguish between free glutamate from tomatoes, cheese or mushrooms and the glutamate from MSG added to foods. Glutamate is glutamate, whether naturally present or from MSG.

## Is it high in sodium?

No, MSG contains only one-third the amount of sodium as table salt (13 percent vs 40 percent) and is used in much smaller amounts. That said, the sodium in MSG needs to be taken into account when sodium levels in food are considered.

## Is it safe?

Yes. MSG is one of the most extensively researched substances in the food supply and has been studied for more than forty years. Numerous international scientific assessments have been conducted, involving hundreds of studies. None of these have conclusively linked MSG to asthma or the infamous 'Chinese Restaurant Syndrome'. Food Standards Australia New Zealand (FSANZ) reviewed the safety of MSG in 2003, concluding 'there is no convincing evidence that MSG is a significant factor in causing systemic reactions resulting in severe illness or mortality'.



Even so, a very small number of people who are sensitive to a range of foods, especially those with asthma, may be sensitive to glutamate.

## How do I know if MSG is in a food?

In Australia and New Zealand, no food additive — including MSG — is approved for use in food until its safety has been established by FSANZ. MSG and other glutamates are among a group of food additives that are generally permitted in foods, due to their safety. The Australia New Zealand Food Standards Code, *Standard 1.2.4 — Labelling of Ingredients*, means packaged food must declare the presence of MSG or any other flavour enhancers as “flavour enhancer” followed by their name or number as follows:

620	L -glutamic acid
621	Monosodium glutamate, L-
622	Monopotassium glutamate, L-
623	Calcium glutamate, Di-L-
624	Monoammonium glutamate, L-
625	Magnesium glutamate, Di-L-
627	Disodium guanylate, 5'-
631	Disodium inosinate, 5'-
635	Disodium ribonucleotides, 5'-

There is no requirement in restaurants and cafés to declare the presence of these additives. If you believe you are sensitive to them you should ask if they are being used. The owner should be able to tell you whether they are used. Sensitive individuals should also be aware that high amounts of glutamates may be present naturally in certain food.

Examples of foods naturally high in glutamates include:

- Hard cheeses like parmesan
- Tomato concentrates and sauces
- Stocks cubes and concentrates
- Sauces such as soy, fish, oyster etc
- Spreads such as Vegemite<sup>®</sup>, Promite<sup>®</sup>, Marmite<sup>®</sup> etc.
- Foods containing added Hydrolyzed Vegetable Protein (HVP)