

# **VEDAN FOOD ADDITIVE - INFORMATION**

## **INTRODUCTION**

Vedan (Vietnam) Enterprise Corporation Limited is a leading producer of food additive products in Asia. We are proud to have been a supplier of food additives products on a global scale, including the Japanese, European and American markets. The content in this leaflet will help you get more information about our products (Monosodium L-Glutamate – MSG, Monopotassium L-glutamate – MPG and L-Glutamic acid – GA (our trade mark is AGA). We hope that it will be useful for you to choose the suitable product for use.

## **PRODUCTION METHOD**

Our AGA and MSG/MPG products are produced from glutamic acid fermentation, using molasses (cane/beet) as the main raw material.

Undergoing a refining process for removing impurities, the resulting product has high purity, meeting physical, chemical and biological safety standards for materials used in food and pharmaceuticals. Please refer the production flowchart at the end of this document for details on how our products are produced.

## **APPLICATION SCOPE**

### **IN FOODSTUFF**

Monosodium L-Glutamate (MSG) – E621, monopotassium L-Glutamate (MPG) – E622 and GA (L-glutamic acid) – E620 are food additives widely used in food industry.

### **+ As salt alternatives**

In combination with salt, MSG and MPG enhance the saltiness of the dish, thereby helping to reduce the amount of salt used. As such, they are widely used in salt substitutes to reduce salt consumption, which is believed to be a contributor to high blood pressure and heart disease and stroke.



**OR**



## **As food additive**

- ✓ MSG and MPG are used as one of an ingredient in the seasoning products for daily cooking.
- ✓ As flavor enhancers, these ingredients help to improve the umami taste of the dishes as well as many processed foodstuff including processed meat product like sausage, instant soup, sauces (fish sauce, soy sauce) and some cakes, etc.



Besides the umami taste, GA also features a smooth transition of sour-salty-umami taste which could be applied as a flavor conditioner/enhancer in some dishes such as hot pot, soup, etc.

## **IN PHARMACEUTICALS**

With high purity, our GA, MSG and MPG products are suitable for use in pharmaceutical preparations to supplement amino acids for the body. In addition, MPG and GA is chosen to use in the products which sodium content must be strictly controlled.

## **IN ANIMAL FEED**

Adding MSG to animal feed helps to improve growth rate as well as meat quality. One study found that the palatability of chicken meat increased and the fat content was reduced when the diet included MSG [1].

Another study reported that dietary supplementation with MSG was safe and effective in growth of post-weaning pigs [2].

## **DOSAGE OF USE**

According to Regulation (EC) No 1333/2008 of the European Parliament, the permitted dosage of use of glutamic acid and its salt derived (E620- E625) in the processed food should be not more than 1% (~1000mg/kg of food) calculated as glutamic acid [3].

The acceptable daily intake (ADI) of 30 mg/kg body weight per day, expressed as glutamic acid, for glutamic acid and glutamates (E 620–625) is the dosage of use suggested by European Food Safety Authority - EFSA [4].

## QUALITY CERTIFICATION AVAILABLE

Being produced under processes that meet all the requirements of FSSC-22000, our product (MSG, MPG and GA) are safe for food use.

In addition, our products are also Halal and Kosher certified, thus suitable for consumption in Muslim and Jewish markets.



## PRODUCT SPECIFICATION

The specification of our products (MSG, MPG, GA) is in compliance with Food Chemicals Codex (FCC) and Commission Regulation (EU) No 231/2012, Regulation (EC) No 1333/2008 of the European Parliament [5].

Detail of the specification for each product is as follows.

### MSG product

❖ Definition	
Nomenclature	Monosodium L-Glutamate, Monosodium Glutamate, Sodium Glutamate, MSG – E621
Grade	Food grade
Formula	$C_5H_8NNaO_4 \cdot H_2O$
Molecular weight	187.13
Description	White crystal or crystalline powder, free flowing
❖ Identification	
Qualitative test for Sodium	Occur typical reaction of Sodium
Qualitative test for Glutamate	Occur typical reaction of Glutamate
Specific rotation $[\alpha]_D^{20}$	Between +24.8 and + 25.3 degree
pH 2 % aqueous solution)	6.7 to 7.2
❖ Physic-chemical items	
Assay (calculated on the dried basis)	Min 99.0 %
Clarity & color of solution	Passes Food Chemicals Codex Test
Solubility	Freely soluble in water; practically insoluble in ethanol or ether
Loss on drying (98°C, 5hrs)	Max 0.5 %

Chloride	Max 0.2 %
Lead	Max 1ppm
Pyrrolidone carboxylic acid	Negative

### MPG product

#### ❖ Definition

Nomenclature	Monopotassium L-Glutamate, Monopotassium Glutamate, Potassium Glutamate, MPG – E622
Grade	Food grade
Formula	$C_5H_8NKO_4 \cdot H_2O$
Molecular weight	203.24
Description	White crystal or crystalline powder, free flowing.

#### ❖ Identification

Qualitative test for potassium	Occur typical reaction of potassium
Qualitative test for Glutamate	Occur typical reaction of Glutamate
Specific rotation $[\alpha]_D^{20}$	Between +22.5 and + 24.0 degree
pH (2 % aqueous solution)	6.7 to 7.3

#### ❖ Physic-chemical items

Assay (calculated on the dried basis)	Min 99.0 %
Clarity & color of solution	Passes Food Chemicals Codex Test
Solubility	Freely soluble in water; practically insoluble in ethanol or ether
Loss on drying (80°C, 5hrs)	Max 0.2 %
Chloride	Max 0.2 %
Lead	Max 1ppm
Pyrrolidone carboxylic acid	Negative

### GA product

#### ❖ Characters

Nomenclature	L-Glutamic acid; L- $\alpha$ -Amino Glutaric acid, Glutamic acid – E620
Grade	Food grade
Formula	$C_5H_9NO_4$
Molecular weight	147.13
Description	White crystal or crystalline powder, free flowing.
Solubility	Sparingly soluble in water; practically insoluble in ethanol or ether

#### ❖ Identification

Qualitative test for Glutamate	Occur typical reaction of Glutamate
Specific rotation $[\alpha]_D^{20}$	Between +31.5 and + 32.2 degree
pH (saturated solution)	3.0 to 3.5

#### ❖ Physic-chemical items

Assay (calculated on the dried basis)	Min 99.0 %
Loss on drying (80°C, 3hrs)	Max 0.2 %
Chloride	Max 0.2 %
Sulphated ash	Max 0.2 %
Lead	Max 1ppm
Arsenic	Max 2.5 ppm
Pyrrolidone carboxylic acid	Negative

## PACKING CONDITION

Our products are available in a variety of sizes and types of packaging, meeting different requirements of customers, ensuring the most convenience for user.

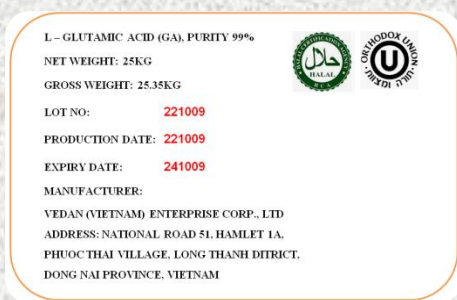
**MSG product** is available in both small packages less than 1kg and large package. The small bag is suitable for consumption in families and restaurants. The large ones are available in 20kg, 25kg packed in paper bag, textile PP bag or carton box with PE bag inside. The jumbo bags are also available with the weight could reach 800kg-1000kg/bag, suitable for use in food industry.



**MPG product** currently is packed in carton box 25kg with PE bag inside. However, we are pleasure to provide it in different size or different package materials as requested of customer.



**GA product** is packed in the 25kg paper bag (with PE bag inside). This kind of product is mostly bought by the food industrial or pharmaceutical producer.



## STORAGE CONDITION & SHELF LIFE

It is recommended to store MSG, MPG and GA product in dry place at ambient temperature, protect from sunlight. No special storage condition is needed.

The shelf life of MSG is 36 months and the shelf life of MPG and GA is 24 months from the produced date printed on the package or label.

## REFERENCES

1. <https://www.researchgate.net/publication/334708769> Meat quality and consumer acceptability of broiler chickens fed different levels of monosodium glutamate MSG
2. <https://www.researchgate.net/publication/232765717> Dietary supplementation with monosodium glutamate is safe and improves growth performance in postweaning pigs
3. [https://webgate.ec.europa.eu/foods\\_system/main/?event=document.view&identifier=2581&documentCrossTable=legislation&documentType=legislation&documentTypeIdentifier=-1](https://webgate.ec.europa.eu/foods_system/main/?event=document.view&identifier=2581&documentCrossTable=legislation&documentType=legislation&documentTypeIdentifier=-1)
4. <https://efsa.onlinelibrary.wiley.com/doi/epdf/10.2903/j.efsa.2017.4910>
5. <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32012R0231&from=EN>

Please feel free contact us if you need any further information regarding our product.

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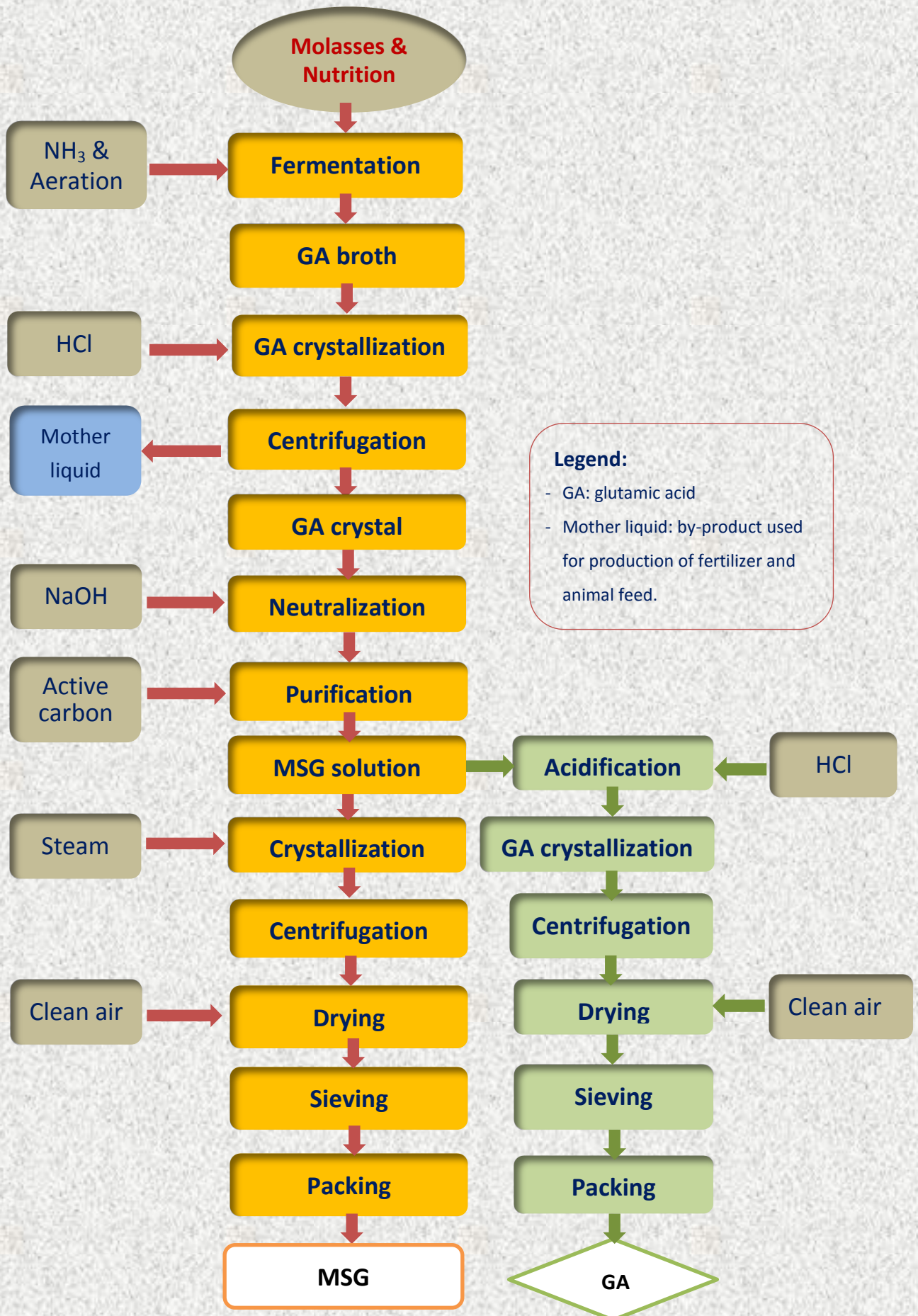
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# GA & MSG PRODUCTION FLOWCHART



## MPG PRODUCTION FLOWCHART

