



# GPS/JIPS Safety Summary

## 1. SUBSTANCE NAME

$\beta$ -Alanine (CAS No.107-95-9)

## 2. GENERAL STATEMENT

$\beta$ -Alanine is an odourless white crystalline powder. In general,  $\beta$ -alanine is used as a raw material for pharmaceuticals and a buffer material.  $\beta$ -Alanine of YUKI GOSEI KOGYO CO., LTD. is used as raw materials for calcium pantothenate, pharmaceuticals, surfactants and supplements.

$\beta$ -Alanine is an amino acid which does not constitute protein.  $\beta$ -Alanine is a component of the naturally occurring peptides carnosine and anserine and also of pantothenic acid (vitamin B5) and is formed *in vivo* by the degradation of dihydrouracil and carnosine. No particular problems regarding safety have been found so far in the use of  $\beta$ -alanine in various fields.

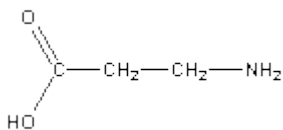
Worker exposure to  $\beta$ -alanine via dermal and inhalation routes is expected in industrial uses during manufacturing of  $\beta$ -alanine or uses of  $\beta$ -alanine as an intermediate. Therefore, it is recommended to use a closed system, machine or local exhaust ventilation system to ensure adequate ventilation as well as providing appropriate personal protective equipments (e.g. safety goggles, respiratory protection such as masks, gloves) in order to minimize exposure.

When consumers use products containing  $\beta$ -alanine, be sure to use the products in accordance with the instruction manuals attached. Emissions to the environment is expected during industrial uses such as manufacturing of  $\beta$ -alanine or uses of  $\beta$ -alanine as an intermediate. Therefore, it is recommended to take measures to prevent leakage and to install waste water treatment equipment and carry out periodic maintenance of equipment in order to minimize the impact on environmental organisms.

## 3. CHEMICAL IDENTITY

General name	$\beta$ -Alanine
Brand name	$\beta$ -Alanine
Chemical name	$\beta$ -Aminopropionic acid
CAS number	107-95-9
Other identical numbers	EC number: 203-536-5 MITI Number: (9)-1554 (CSCL <sup>1</sup> ), ISHA <sup>2</sup> )
Molecular formula	H <sub>2</sub> NCH <sub>2</sub> CH <sub>2</sub> COOH



Structural formula	
Other information	Not specified
References	NikkajiWeb NITE Chemical Risk Information Platform (NITE-CHRIP)

- 1) Chemical Substances Control Law in Japan
- 2) Industrial Safety and Health Act in Japan

#### 4. USES AND APPLICATIONS

Main uses	$\beta$ -Alanine of YUKI GOSEI KOGYO CO., LTD. is used as raw materials for calcium pantothenate, pharmaceuticals, surfactants and supplements.
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#### 5. PHYSICAL/CHEMICAL PROPERTIES

Property	Value
Form (physical state)	Crystalline powder (20°C, 1013 hPa)
Colour	White
Odour	Odourless
Relative density	1.437 g/cm <sup>3</sup> (19°C)
Melting point / Freezing point	Melting point: 197 - 198°C (Dec.)
Flammability	Not highly flammable
Flash point	Not applicable
Explosive properties	Non explosive
Autoflammability / self-ignition temperature	Not to have a relative self-ignition temperature below its melting temperature
Vapour pressure	0.00000674 Pa (25°C)
Molecular Weight	89.09
Water solubility	40% (20°C)
Partition coefficient n-octanol / water	log Kow = -3.05
Reference	Chemical Safety Report, Safety Data Sheet

#### 6. HEALTH EFFECTS

Effect Assessment	Result
Acute toxicity	No adverse effect observed for oral route
Skin corrosion / irritation	No adverse effect observed (not irritating)
Serious damage / eye irritation	No adverse effect observed (not irritating)



Respiration sensitization	No study available
Skin sensitization	No adverse effect observed (not sensitizing)
Genetic toxicity	No adverse effect observed (negative)
Carcinogenicity	No study available
Reproductive toxicity	No adverse effect observed in a reproductive / developmental toxicity screening test
Repeated dose toxicity	No adverse effect observed for oral route
Reference	Chemical Safety Report

## 7. ENVIRONMENTAL EFFECTS

Effect Assessment	Result
Aquatic Toxicity	No hazard identified
Hazardous to the ozone layer	No hazard identified
Reference	Chemical Safety Report

Fate and behaviour	Result
Mobility in environment	<ul style="list-style-type: none"> <li>• Potential for adsorption to organic soil is low on the basis of the estimated Koc of 0.02798.</li> <li>• Evaporation from the water surface into the atmosphere is not to be expected on the basis of the estimated Henry's Law constant H of 0.00000758 Pa·m<sup>3</sup>/mol at 25°C.</li> </ul>
Biodegradation	A screening test according to OECD test guideline resulted in readily biodegradable.
Bioaccumulation potential	Model calculations confirm no bioaccumulation potential for β-Alanine
PBT/vPvB conclusion	Not a PBT / vPvB substance
Reference	Chemical Safety Report

## 8. EXPOSURE

Subject	Exposure potential for main uses of our products (Route of exposure)
Worker exposure	<p>Worker exposure to β-alanine via dermal and inhalation routes is expected in industrial uses during manufacturing of β-alanine or uses of β-alanine as intermediate.</p> <p>PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition</p>
Consumer exposure	Consumer exposure via oral route is expected as β-alanine is used as a raw material for supplements.



Environmental exposure	Emission to the environment is expected during industrial uses such as manufacturing of $\beta$ -alanine or uses of $\beta$ -alanine as intermediates.
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## 9. RISK MANAGEMENT RECOMMENDATIONS

Subject	Recommended Risk Management Measures
Worker exposure	<ul style="list-style-type: none"> <li>- Use a closed system, machine or local exhaust ventilation system to ensure adequate ventilation in order to minimize exposure.</li> <li>- Take measures to prevent dust generation. In the case of dust generation, consider to use dust protection mask or powered air purifying respirator as well as simple dust mask.</li> <li>- Use appropriate personal protective equipments (e.g. safety goggles, respiratory protection such as masks, gloves) and be sure to have an eyewash and shower equipment near the handling area.</li> <li>- Workplace managers ensure to train and educate workers on the selection and use of appropriate protective equipments and the way of maintaining workplace safety.</li> </ul>
Consumer exposure	<ul style="list-style-type: none"> <li>- Use the products in accordance with the instruction manuals attached.</li> </ul>
Environmental exposure	<ul style="list-style-type: none"> <li>- Take measures to prevent leakage and to install waste water treatment equipment and carry out periodic maintenance of equipment in order to minimize the impact on environmental organisms.</li> <li>- Prevent residues of <math>\beta</math>-alanine from entering rivers, surface water channel or drains.</li> </ul>
Remarks	None
Notes	None

## 10. SUBSTANCE REVIEW INFORMATION

Review Program	Review status
International Chemical Safety Cards (ICSC)	—
OECD High Production Volume Chemicals (HPV Chemicals)	—
Others	
Japan HPV Challenge Program	Final Report is available from: <a href="http://www.safe.nite.go.jp/jcheck/detail.action?cno=107-95-9&amp;mno=9-1554&amp;request_locale=ja">http://www.safe.nite.go.jp/jcheck/detail.action?cno=107-95-9&amp;mno=9-1554&amp;request_locale=ja</a>

## 11 Regulatory information / GHS classification and labelling information

**Regulatory information**

Legislation	Regulatory status
REACH	Registered Substance <a href="https://www.echa.europa.eu/web/guest/registration-dossier/-/registered-dossier/2084">https://www.echa.europa.eu/web/guest/registration-dossier/-/registered-dossier/2084</a>
Chemical Substances Control Law (CSCL) in Japan	Existing Chemical
Industrial Safety and Health Act (ISHA) in Japan	Existing Chemical

**GHS classification**

Type of hazard	Classification
Physical hazard	Not classified
Health hazard	Not classified
Environmental hazard	Not classified

**GHS labelling elements**

Pictogram / symbol	Not applicable
Signal word	Not applicable
Hazard statement	Not applicable

**12. CONTACT INFORMATION**

Company name: YUKI GOSEI KOGYO CO., LTD.  
Address: 10-4, Nihongashi-Ningyocho 3-Chome, Chuo-ku 103-0013  
Tokyo, Japan  
Department in charge: Sales Division  
Telephone /FAX numbers: +81-3-3664-3982 / +81-3-3664-3991

**13. DATE OF ISSUE / REVISION DATE / OTHER INFORMATION**

Date of issue: December 3, 2018

Revision history:

Revision date	Section	changes	Version

Other information: None

**14. DISCLAIMER**



This GPS safety summary is intended to provide information on chemical products as a brief summary in line with GPS (Global Product Strategy) of the chemical industry. It does not provide expert information such as risk assessment procedures and/or effects on human health and the environment. It is not intended to replace Safety Data Sheet (SDS) or Chemical Safety Report (CSR). The information provided is based on the regulations, materials and information available at the date of its publication, however, it provides no warranty or representation regarding the content. In addition, it is not intended to specify the quality of the product.