

## Material Safety Data Sheet SOY PROTEIN ISOLATE

### Section 1 - Product Identification

Synonyms : Soybean protein  
Molecular Weight : 254 g/mol  
Chemical Formula :  $C_{15}H_{10}O_4$   
Company Identification : Tradeasia International Pte. Limited  
Address : 133 Cecil Street # 12-03 Keck Seng Tower, Singapore  
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Email: contact@chemtradeasia.com

Recommended use of the chemical and restrictions on use

The product is used in industrial manufacturing, in particular in :

- Food and Beverage

### Section 2 – Composition/Information on Ingredients

The product contains greater than 90.0 percent (%) Soy Protein Isolate,  $C_{13}H_{10}N_2$

Chemical Name	EC No/CAS No	Purity, %
Soy Protein Isolate	1924/2006 9010-10-0	min. 90.0

### Section 3 – Hazards Identification

#### 3.1 Classification of the substance according to GHS

Not a hazardous substance according to GHS.

#### Cautionary Statement

Read label before use

Keep out of reach of children

#### 3.3. Other hazards which do not result in classification

Soy protein isolate is a white odourless, powdered substance that is not flammable, combustible, or explosive, and has low acute oral and dermal toxicity.

#### Potential health effects

Inhalation and ingestion are the most significant route of exposure in occupational and other settings.

#### Inhalation

Occasional mild irritation effects to nose and throat may occur from inhalation of soy protein isolate dust.

#### Eye contact

Soy protein isolate can be an eye irritant.

#### Skin contact

Soy protein isolate does not cause irritation to intact skin.

#### Ingestion

Products containing soy protein isolate are suitable for ingestion. Soy protein isolate has low acute toxicity.

#### Potential ecological effects

Soy protein isolate has minimal effect on the ecology.

#### Signs and symptoms of exposure

Symptoms of overdose of soy protein isolate have been associated with ingestion into the body. These may include nausea, constipation and bloating.

## **Section 4 – First-Aid Measures**

### **4.1. Description of first aid measures**

#### **Skin contact**

No treatment necessary because non-irritating.

#### **Eye contact**

Use eye wash fountain or fresh water to cleanse eye. If irritation persists for more than 30 minutes, seek medical attention.

#### **Inhalation**

If symptoms such as nose or throat irritation are observed, remove to fresh air.

#### **Ingestion**

If large amounts are ingested in a short time, contact a doctor immediately.

#### **Note to physicians**

soy protein isolate should be diluted to an appropriate concentration before ingestion into the body. It should be taken in appropriate amounts.

### **4.2. Most important symptoms and effects, both acute and delayed**

N.A.

### **4.3. Indication of any immediate medical attention and special treatment needed**

N.A.

## **Section 5 – Fire Fighting Measures**

### **5.1. Suitable Extinguishing media**

Any fire extinguishing media may be used on nearby fires.

### **5.2. Specific hazards arising from the chemical**

Soy protein isolate is not flammable, combustible or explosive.

### **5.3. Special protective actions for fire-fighters**

N.A.

## **Section 6 – Accidental Release Measures**

### **6.1. Personal precautions, protective equipment and emergency procedures**

Avoid dust formation. In case of exposure to prolonged or high level of airborne dust, wear a personal respirator in compliance with national legislation.

### **6.2. Environmental precautions**

Soy protein isolate is a water-soluble white powder that is naturally occurring and stable in the environment.

### **6.3. Methods and material for containment and cleaning up**

#### **Land spill**

Vacuum, shovel or sweep up soy protein isolate and place in containers for disposal in accordance with applicable local regulations. Avoid contamination of water bodies during clean up and disposal. No personal protective equipment is needed to clean up land spills.

#### **Spillage into water**

Where possible, remove any intact containers from the water. Advise local water authority that none of the affected water should be used for irrigation or for the abstraction of potable water until natural dilution returns to its normal environmental background level.

## **Section 7 – Handling and Storage**

### **7.1. Precautions for safe Handling**

To maintain package integrity and to minimise caking of the product, bags should be handled on a first-in first out basis. Good housekeeping and dust prevention procedures should be followed to minimise dust generation and accumulation. Your supplier can advise you on safe handling, please contact the supplier.

The product should be kept away from strong reducing agents. Apply above handling advice when mixing with other substances.

## **7.2. Conditions for safe storage, including any incompatibilities**

No special handling precautions are required, but dry, indoor storage is recommended. No specific requirements. Provide appropriate ventilation and store bags such as to prevent any accidental damage.

## **Section 8 – Exposure Controls/Personal Protection**

### **8.1. Control parameters**

Occupational exposure limits for dust (total and respirable). are treated by OSHA, Cal OSHA and ACGIH as “Particulate Not Otherwise Classified” or “Nuisance Dust”

ACGIH/TLV 10 mg/m<sup>3</sup>

Cal OSHA/PEL 10 mg/m<sup>3</sup>

OSHA/PEL (total dust) 15 mg/m<sup>3</sup>

OSHA/PEL (respirable dust) 5 mg/m<sup>3</sup>

### **8.2. Appropriate engineering controls**

Maintain air concentrations below occupational exposure standards.

Use local exhaust ventilation to keep airborne concentrations of soy protein isolate dust below permissible exposure levels. Wash hands before breaks and at the end of the workday. Remove and wash soiled clothing.

### **8.3. Individual protection measures, such as personal protective equipment (PPE)**

#### **Respiratory protection**

In case of prolonged exposure to dust wear a personal respirator in compliance with national legislation (make reference to the appropriate CEN standard)

#### **Eyes and hands protection**

Goggles and gloves are not required for normal industrial exposures, but may be warranted if environment is excessively dusty.

## **Section 9 – Physical and Chemical Properties**

### **9.1. Information on basic physical and chemical properties**

Appearance : Off white to pale brown powder

Odour : Soybeany note

Odour threshold : N.A.

pH @ 20°C : 6-7

Melting point : N.A

Boiling point : N.A

Flash point : Non flammable

Evaporation rate : N.A.

Flammability : N.A.

Upper/lower flammability or explosive limits : Non explosive

Vapour pressure : Negligible @ 20°C

Vapour density : N.A.

Relative density : 1.54 g/cm<sup>3</sup>

Solubility in water : 0.91% @ 20°C

Partition coefficient: n-octanol/water : N.A

Auto-ignition temperature : N.A.

Decomposition temperature : N.A

Viscosity : N.A.

### **9.2. Other information**

Molecular weight : 254 g/mol

Specific gravity : 1.56 @ 20°C

## **Section 10 – Stability and Reactivity**

### 10.1. Reactivity

Soy protein isolate is a stable product.

### 10.2. Chemical stability

Soy protein isolate is a stable product.

### 10.3. Possibility of hazardous reactions

N.A

### 10.4. Conditions to avoid:

Avoid humid air as soy protein isolate may absorb moisture.

### 10.5. Incompatible materials

N.A

### 10.6. Hazardous decomposition products

Products of degradation of soy protein isolate is not hazardous to the environment.

## Section 11 – Toxicological Information

### 11.1. Information on toxicological effect

#### 11.1.1. Substances

##### Acute toxicity<sup>(1)</sup>

No acute oral toxicity (NiSATA)

##### Skin corrosion / irritation<sup>(2)</sup>

Non-irritant. (NiSATA)

##### Serious eye damage/ irritation

Soy protein isolate can be an eye irritant.

##### Respiratory or skin sensitization

Soy protein isolate is not a skin sensitizer.

##### Germcell mutagenicity

Soy protein isolate is not mutagenic.

##### Carcinogenicity

Soy protein isolate is not carcinogenic

##### Reproductive toxicity

Soy protein isolate has no known reproductive toxicity.

##### STOT-single exposure

N.A.

##### STOT-repeated exposure

N.A.

##### Aspiration Hazard

Soy protein isolate has no aspiration hazard.

## Section 12 – Ecological Information

### 12.1. Toxicity

Soy protein isolate occurs naturally in soybeans.

#### Phytotoxicity

Soy protein isolate is an essential source of protein in organisms like animals. Thus, it has no phytotoxicity.

#### Algal toxicity

No known algal toxicity.

#### Invertebrate toxicity

No known invertebrate toxicity.

#### Fish toxicity

No known fish toxicity.

## 12.2. Persistence and degradability

Soy protein isolate is naturally occurring and ubiquitous in the environment.

## 12.3. Bioaccumulative potential

Not significantly bioaccumulative.

## 12.4. Mobility in soil

The product is soluble in water and is leachable through normal soil.

## 12.5. Other adverse effects<sup>(3)</sup>

Soy protein isolate may lower fertility in women due to the phytoestrogen it contains. Increased phytoestrogen levels may decrease the follicle stimulating hormones and leutinizing hormone in the women's bodies. (JE, 2007)

## Section 13 – Disposal Considerations

### 13.1. Disposal methods

Small quantities of soy protein isolate can usually be disposed of at landfill sites. No special disposal treatment is required, but local authorities should be consulted about any specific local requirements. Tonnage quantities of product are not recommended to be sent to landfills. Such product should, if possible, be used for an appropriate application.

## Section 14 – Transport Information

Soy protein isolate has no UN Number, and is not regulated under international rail, road, water or air transport regulations.

14.1. UN number : N.A.

14.2. UN proper shipping name : N.A

14.3. Transport of hazard classes : N.A

14.4. Packing group : N.A

14.5. Environmental hazards : N.A.

14.6. Special precautions for user : N.A

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: N.A.

## Section 15 – Regulatory Information

### 15.1. Safety, health and environmental regulations

It should be noted that Soy protein isolate are safe under conditions of normal handling and use, besides, they are essential nutrients to plants, and research shows that they play a beneficial role in human health.

### Clean Air Act (Montreal Protocol)

Soy protein isolate was not manufactured with and does not contain any Class I or Class II ozone depleting substances.

### Chemical inventory listing

U.S. EPA TSCA Inventory 1330-43-4

Canadian DSL 1330-43-4

EINECS 215-540-4

South Korea 1-760

Japanese MITI (1)-69

Ensure all national/local regulations are observed.

## Section 16 : Additional Information

### 16.1. Mainly changes made to the previous version of this Material Safety Data Sheet (MSDS):

- This MSDS complies with ISO 11014; the requirements of UN-GHS

Revision No	Revision content
05	<ul style="list-style-type: none"><li>• This SDS is updated in accordance with the GHS (Rev.6) (2015)-Guidance on the Compilation of Safety data Sheets.</li><li>• This SDS is updated in line with Eti Maden Corporate identity.</li></ul>



## 16.2. List of abbreviation and acronyms used in this MSDS

**SDS** : Safety Data Sheets

**Index N°** : atomic number of the element most characteristic of the properties of the substance

**CAS No** : Chemical Abstracts Service number

**EC No** : EINECS Number : European Inventory of Existing Commercial Substances

**GHS** : Globally Harmonised System of Classification and Labelling

**N.A.** : Not Applicable

**OSHA** : Occupational Safety & Health Administration

**Cal OSHA** : The State of California Division of Occupational Safety and Health (DOSH)

**PEL** : Permissible Exposure Limits

**ACGIH** : American Conference of Governmental Industrial Hygienists

**TLV** : Threshold Limit Value

**Japanese MITI** : Japanese Ministry of International Trade and Industry

**EC<sub>50</sub>** : Half maximal effective concentration

**UN** : United Nations

**U.S. EPA TSCA Inventory**: Inventory of the chemical substances manufactured or processed in the United States according to Toxic Substances Control Act compiled and published under the authority of the Environmental Protection Agency

**Canadian DSL**: Canadian Domestic Substances List

## 16.3. List of relevant hazard statements and precautionary statements used in this MSDS

### Hazard Statement

Soy protein isolate is not hazardous according to GHS.

### Cautionary Statement

Read label before use

Keep out of reach of children

## 16.4. References

1. NiSATA, E. (n.d.). *Material Safety Data Sheet for Soy Protein Isolate*.

2. JE, C. (2007). Diet and lifestyle in the prevention of ovulatory disorder infertility. *Obstet Gynecol*, 5(110), 1050-.

## 16.5. Disclaimer of Liability

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