

# Material Safety Data Sheet

(according to 1907/2006/EC)



## ENZICUR (1500)

Last update: 16/03/2010, version 3.0

page 1 / 8

### 1 IDENTIFICATION OF SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

- **Product details**

The carton box contains a 2.5 L can of vegetable oil and three different aluminium bags that are sealed together containing two powders LP-A (688 gram), LP-B (688 gram) and a granule LP-C (125 gram).

- **Trade name:** ENZICUR
- **Application of the preparation:** Fungicide against powdery mildew in vegetables, ornamentals and fruit crops
- **Supplier:** Koppert B.V.  
Veilingweg 17  
2651 BE Berkel en Rodenrijs
- **Telephone:** +31 (0)10-5140444
- **Fax:** +31 (0)10-5115203
- **E-mail:** info@koppert.nl
- **Website:** www.koppert.com
- **Anti poisoning Centre Emergency info:** +31 (0)30-2748888  
(Only for use by a Doctor in obtaining information by accidental poisoning)

### 2 HAZARDS IDENTIFICATION

- **Hazard designation:** O, Xn
- **Information pertaining to particular danger for man and environment:** R8, R36/38, R42/43
- **Classification system:** The classification is according to 67/548/EC, 99/45/EC, 2001/58/EC.
- **Additional information:** -

### 3 COMPOSITION / INFORMATION ON INGREDIENTS

- **Active ingredients:**

Potassium iodide (LP-B),	CAS 7681-11-0,	5.2% (R36/37/38)
Potassium thiocyanate (LP-B),	CAS 333-20-0,	2.2% (R20/21/22)
- **Others ingredients:**

Sodium percarbonate (LP-C)	CAS 15630-89-4	> 1% (R8)
Lactoperoxidase (LP-A)	CAS 9003-99-0	> 1% (R42/R43)

# Material Safety Data Sheet

(according to 1907/2006/EC)

## ENZICUR (1500)

Last update: 16/03/2010, version 3.0

page 2 / 8

### **4** FIRST AID MEASURES

- **Symptoms / effects:** Exposure to product does not cause any acute symptoms.
- **Inhalation:** Move person to fresh air and keep warm.
- **Skin contact:** Rinse thoroughly with water. Take off contaminated clothing.
- **Eye contact:** Rinse opened eye for several minutes (~15 minutes) under running water. If symptoms persist, consult doctor.
- **Ingestion:** Rinse mouth with water. Do not drink water or any other liquid. Do not induce vomiting. Seek medical advice immediately.

### **5** FIRE FIGHTING MEASURES

- **Suitable extinguishing agents:** Use large amounts of water.
- **Unsuitable extinguishing agents:** None.
- **Protective equipment:** All usual equipment allowed; fire fighters should wear appropriate protective equipment.
- **Remark:** When using the product, the content of the three bags should be mixed with water, directly. This presents no fire or explosion hazards. If the content of the three bags (LP-A,B,C) accidentally get into contact with each other in dry form, large amounts of water should be used to dilute mixture and prevent the hazards of the individual constituents.

### **6** ACCIDENTAL RELEASE MEASURES

- **Person-related safety precautions:** For personal precautions see chapter 8.
- **Measures for environmental protection:** Ingredients of ENIZUCR do not give rise to environmental concern.
- **Measures for cleaning / collecting:** Wastes resulting from the use of this product may be disposed of as normal waste material if properly cleaned with water.
- **Additional information:** If the content of the three bags (LP-A,B,C) accidentally get into contact with each other in dry form, large amounts of water should be used to dilute the mixture and prevent the hazards of the individual constituents.

# Material Safety Data Sheet

(according to 1907/2006/EC)

## ENZICUR (1500)

Last update: 16/03/2010, version 3.0

page 3 / 8

### 7 HANDLING AND STORAGE

- **Handling:** Read the label before use. Wear proper gloves.
- **Information about protection against explosions and fires:** When using the product, the content of the three bags should be mixed with water, directly. This presents neither fire nor explosion hazards.
- **Storage:** Store in a cool and dry location between 4 and 10°C to keep enzymes stable

### 8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

- **Exposure limits:** The TLV (Threshold Limit Value) for sodium percarbonate and potassium iodide is 10 mg/m<sup>3</sup>.
- **Personal protection:**
  - ❖ **respiratory** No respiratory protection necessary.
  - ❖ **hand** During the preparation and the application of the spray protective gloves should be worn.
  - ❖ **Eyes** No eye protection necessary.
  - ❖ **Skin and body** During the preparation and the application of the spray protective clothing and gloves should be worn.

### 9 PHYSICAL AND CHEMICAL PROPERTIES

- **Appearance, color and odour** **LP-A** Odourless light brown soluble powder (SP)  
**LP-B** slightly iodine white Soluble powder (SP)  
**LP-C** Odourless white Soluble granule (SG)
- **Auto-ignition temperature** Not auto-flammable.
- **Explosion / flammability** No explosive properties, not highly flammable.
- **pH** 5.65 (in 0.15% solution)
- **Density** **LP-A:** pour: 0.69 g/mL, tap: 0.86 g/mL  
**LP-B:** pour: 0.42 g/mL, tap: 0.51 g/mL  
**LP-C:** pour: 1.12 g/mL, tap: 1.16 g/mL
- **Solubility in water** Readily soluble in water.

### 10 STABILITY AND REACTIVITY

- **Stability:** Stable when kept dry and cool (4-10°C). Avoid contact with water (except in case of fire).
- **Materials to avoid:** LP-A is incompatible with oxidizing agents, bases, alkali metals and amines. Potassium iodide is incompatible with

# Material Safety Data Sheet

(according to 1907/2006/EC)

**KOPPERT**

BIOLOGICAL SYSTEMS

## ENZICUR (1500)

Last update: 16/03/2010, version 3.0

page 4 / 8

diazonium salts, diisopropyl peroxydicarbonate, oxidants, bromine and chlorine trifluorides, fluorine perchlorate, calomel, potassium chlorate, metallic salts, tartaric and other acids. Sodium percarbonate should not be in contact with water (except in case of fire), ignition sources, organic materials, heavy metal ions, alkali, acids, reducing agents.

- **Conditions to avoid:**

Keep away from heat and heat sources.

- **Hazardous decomposition products:**

LP-A may form carbon dioxide and carbon monoxide when heated to decomposition. Potassium thiocyanate may produce nitrogen oxides, sulfur compounds and cyanides when burning; potassium iodide may form oxides of the contained metal and free or ionic halogen. Sodium percarbonate may produce oxygen on decomposition.

### 11 TOXICOLOGICAL INFORMATION

- **Basis for assessment:**

No acute toxicological studies have been performed with the product. The classification is based on expert judgment of the MSDS data from the worst case individual ingredients

- **Acute oral toxicity (LD50):**

Potassium iodide (mouse): 1862 mg/kg  
Potassium thiocyanate (rat): 854 mg/kg  
Sodium percarbonate (rat): 1034 mg/kg

- **Acute dermal toxicity (LD50):**

Potassium iodide (rat) >2000 mg/kg  
Potassium thiocyanate (rat) >2000 mg/kg  
Sodium percarbonate (rabbit): >2000 mg/kg

- **Acute inhalation toxicity:**

Potassium thiocyanate, potassium iodide and sodium percarbonate (LC50-rat = 4.58 mg/L) can cause irritation of the respiratory tract. A small percentage of the population may exhibit an allergic reaction to the enzyme, by sensitization through inhalation.

- **Skin irritation:**

Potassium thiocyanate, potassium iodide and

## ENZICUR (1500)

Last update: 16/03/2010, version 3.0

page 5 / 8

- **Eye irritation:**

sodium percarbonate can cause skin irritation. A small percentage of the population may exhibit an allergic reaction to the enzyme, by sensitisation through dermal contact.

Potassium thiocyanate, potassium iodide and sodium percarbonate cause eye irritation.

- **Skin sensitisation:**

A small percentage of the population may exhibit an allergic reaction to the enzyme, by sensitisation through dermal contact.

- **Chronic effects:**

Chronic oral exposure to iodide containing compounds and thiocyanate affect the functioning of the thyroid.

None of the ingredients of ENZICUR are known carcinogens; they are not classified by NTP, IARC or OSHA.

Chronic exposure to iodide containing compounds and thiocyanate may have adverse effects during pregnancy.

The constituents of ENZICUR are not mutagenic or no information is available. Both active ingredient salts potassium iodide and potassium thiocyanate are proposed for MRL-exemption by EU-Commission decision 839/2008/EC.

## ENZICUR (1500)

Last update: 16/03/2010, version 3.0

page 6 / 8

### 12 ECOLOGICAL INFORMATION

- **Basis for assessment:** No ecotox studies have been performed with the product. Therefore the endpoint from the studies with the single active ingredients are listed.
- **Mobility:** not available for the active ingredients
- **Persistence / degradability:** Potassium iodide is an inorganic salt, therefore aerobic biodegradation is not relevant. Thiocyanates can degrade in soil
- **Bioaccumulation:** No data available.

- **Acute toxicity aquatic organisms**
- **Algae (EC50 48 h.)** Potassium thiocyanate: 17.1 mg/L  
Potassium iodide: (NOEC) 1308 mg/L
- **Daphnids (EC50 72 h.)** Potassium thiocyanate: 4.55 mg/L  
Potassium iodide: 9.8 mg/L
- **Fish (LC50 96 h.)** Potassium thiocyanate: 17.1 mg/L  
Potassium iodide: 2190 mg/L

### 13 DISPOSAL CONSIDERATIONS

- **Precautions:** The ingredients of ENZICUR do not give rise to environmental concern.
- **Product disposal:** Wastes resulting from the use of this product may be disposed of as normal waste material if properly cleaned with water.
- **Contaminated packaging:** Dilute with water and flush away.

# Material Safety Data Sheet

(according to 1907/2006/EC)



## ENZICUR (1500)

Last update: 16/03/2010, version 3.0

page 7 / 8

### **14** TRANSPORT INFORMATION

#### ADR (road transport)

UN Number	3378
Proper shipping name	Sodium Carbonate Peroxyhydrate
Class	5.1
Packing group	III
Classification code	O2
Hazard identification number	50
Label	5.1
Mark	none
Tunnel restriction code	(E)

Limited quantities maximum 1 kg per inner packaging, maximum gross weight 30 kg per outer packaging.

#### IMDG (sea transport)

UN number	3378
Proper Shipping Name	Sodium Carbonate Peroxyhydrate
Class	5.1
Packing group	III
Label	5.1
Mark	none
Ems	F-A, S-Q
Marine Pollutant	no

Limited quantities maximum 5 kg per inner packaging, maximum gross weight 30 kg per outer packaging.

#### IATA (air transport)

UN Number	3378
Proper Shipping Name	Sodium Carbonate Peroxyhydrate
Class	5.1
Packing group	III
Label	5.1

Limited quantities maximum 1 kg per inner packaging, maximum gross weight 30 kg per outer packaging.

# Material Safety Data Sheet



(according to 1907/2006/EC)

## ENZICUR (1500)

Last update: 16/03/2010, version 3.0

page 8 / 8

### **15** REGULATORY INFORMATION

- **Label name:** ENZICUR
- **Symbol(s):**
  -  Xn: Harmfull
  -  O: Oxidizing
- **R(isk) phrase(s):**
  - R8: Contact with combustible material may cause fire
  - R36/38: Irritating to eyes and skin
  - R42/43: May cause sensitization by inhalation and skin contact
- **S(afety) phrase(s):**
  - S17: Keep away from combustible material.
  - S21: When using do not smoke.
  - S23: Do not breathe spray.
  - S35: This material and its container must be disposed of in a safe way.
  - S36/37: Wear suitable protective clothing and gloves.
  - S45: In case of accident or if you feel unwell seek medical advice immediately (show the label where possible).

### **16** OTHER INFORMATION

This information only concerns the above mentioned product and does not need to be valid if used with other product(s) or in any process.

This document contains important information regarding a safe disposal, handling and use of this product. The information should be brought to the attention of the health / safety / environment-consultant of your organisation. The information from this document should be announced to anyone working with this product. The information is to our best present knowledge correct and complete and is given in good faith but without warranty. It remains to the user's own responsibility to make sure that the information is appropriate and complete for his special use of this product.