

# Material Safety Data Sheet



Issue No: 3.2

Issue date: 24 May 2018

## 1. IDENTIFICATION OF SUBSTANCE AND SUPPLIER

Product Name **ENDURA PLUS**  
Substance: Fungicide (Suspension Concentrate)  
Recommended Use: Agricultural Fungicide for use as described on the product label.  
Supplier Name: ICA International Chemicals (Pty) Ltd  
Address: 28 Planken Street  
Plankenbrug Industrial  
STELLENBOSCH · 7600 · SOUTH AFRICA  
Telephone No.: +27 (0) 21 886 9812  
Fax No.: +27 (0) 21 886 8209  
Website: [www.icaonline.co.za](http://www.icaonline.co.za)  
Emergency Tel. No.: Griffon Poison Information Centre +27 82 446 8946  
Poisons Helpline 0861 555 777

## 2. HAZARD IDENTIFICATION

Hazard: **HAZARDOUS SUBSTANCE - NON-DANGEROUS GOOD**  
Hazard classification according to the criteria of NOHSC.  
Dangerous goods classification according to the ADG Code.

Risk Phrases: **CLASSIFICATION FOR THE TECHNICAL PRODUCT(S)**  
R40 : Limited evidence of a carcinogenic effect.  
R46 : May cause heritable genetic damage.  
R60/61/62 : Possible risk / May cause risk of impaired fertility, harm to unborn child.  
R63 : Possible risk of harm to the unborn child.  
R50/R51/53 : Very toxic to aquatic organisms may cause long-term adverse effects in the aquatic environment.

Safety Phrases: S2 : Keep out of reach of children.  
S13 : Keep away from food, drink and animal feeding stuffs.  
S46 : If swallowed, seek medical advice immediately and show this MSDS or label.  
S53 : Avoid exposure - obtain special instructions before use.  
S60 : This material and its container must be disposed of as hazardous waste.  
S61 : Avoid release to the environment. Refer to special instructions/SD sheets.  
S36/37 : Wear suitable protective clothing and gloves.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT(s)	CAS NO.:	EU/UN Classification on <b><u>TECHNICAL PRODUCT(S)</u></b>	Proportion
Epoxiconazole (2RS,3SR)-1-[3-(2-chlorophenyl)-2,3-epoxy-2-(4-fluorophenyl)propyl]-1H-1,2,4-triazole	133855-98-8/ (formerly 106325-08-0)	<u>Labelling:</u> Xn; N; R: 40-62-63-51/53 S: (2)36/37-46-61	12.5 %
Carbendazim (Methyl benzimidazole-2-ylcarbamate)	10605-21-7	<u>Labelling:</u> T; N; R: 46-60-61-50/53 S: 53-45-60-61	12.5 %
Other Ingredients			
Water			Fill to 1 litre

#### 4. FIRST AID MEASURES

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Show this MATERIAL SAFETY DATA SHEET to a doctor.

**NEVER ADMINISTER ANYTHING ORALLY TO AN UNCONCIOUS PERSON.**

<b>INHALATION:</b>	If experiencing respiratory symptoms, remove person to fresh air and keep at rest in a position comfortable for breathing. Administer oxygen if breathing is difficult. Call for immediate medical assistance.
<b>EYES:</b>	Rinse eyes cautiously with clean water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing while holding eyelids apart. Seek medical assistance if irritation continues.
<b>SKIN:</b>	Remove contaminated clothing immediately. Rinse affected areas (skin) with plenty of water/shower for several minutes and wash then with water and soap. Wash contaminated clothing before re-use.
<b>INGESTION:</b>	If swallowed, DO NOT induce vomiting. Rinse mouth with water. If vomiting does occur, keep on giving fluids. Get medical advice.

#### 5. FIRE FIGHTING MEASURES

<b>SUITABLE EXTINGUISHING MEDIA:</b>	<ul style="list-style-type: none"><li>• <b>SMALL FIRES:</b> Chemical powder or foam can be used.</li><li>• <b>LARGE FIRES:</b> There is no risk of an explosion from this product if commercial quantities are involved in a fire. Choose extinguishing media to suit burning material.</li></ul>
<b>Fire HAZARDS:</b>	<ul style="list-style-type: none"><li>• Gives off irritating or toxic fumes (or gases) in a fire.</li></ul>
<b>PRECAUTIONS FOR FIRE FIGHTERS:</b>	<ul style="list-style-type: none"><li>• Fire fighters should wear full protective gear.</li><li>• Keep unauthorized personnel away.</li><li>• Keep out of low areas and ventilate closed spaces before entering.</li></ul>
<b>FIRE RATING:</b>	Not combustible.

#### 6. ACCIDENTAL RELEASE MEASURES

##### SPILL OR LEAK:

- Stop leak if safe to do, and contain spill.
- Do not wash away into sewer. Do not let this chemical enter the environment.
- Absorb onto sand, vermiculite or other suitable absorbent material.
- Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly.
- If spill is too large or if absorbent material is not available, try to create a dike to stop material from spreading or going into drains or waterways.
- Because of the environmentally hazardous nature of this product, special care should be taken to restrict release to waterways or drains.

##### LARGE SPILLS:

- Wear full protective clothing (eye/face/breathing/overall/footwear) as a precautionary measure.
- In event of a major spill deal with it immediately; prevent spillage from entering drains or waterways.
- Dike far ahead of liquid spill for later disposal.
- Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly.

#### 7. HANDLING AND STORAGE

<b>PRECAUTIONS FOR SAFE HANDLING:</b>	<ul style="list-style-type: none"><li>• <u>Use general safety clothing and equipment as a preventative measure are:</u> Respiratory equipment at all times when spraying is done; Protective gloves, Protective clothing, Eye protection and Protective footwear.</li></ul>
<b>CONDITIONS FOR SAFE STORAGE:</b>	<ul style="list-style-type: none"><li>• Keep out of reach of children.</li><li>• Keep away from food, drink and animal feeding stuffs.</li><li>• Store in the closed original container in a cool, dry and well ventilated, secure area, out of direct sunlight.</li></ul>

## 8. EXPOSURE CONTROL / PERSONAL PROTECTION

<b>EXPOSURE LIMITS:</b>	Exposure limits have not been established for any of the significant ingredients in this product.
<b>ENGINEERING CONTROLS:</b>	Use in well ventilated area. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.
<b>PERSONAL PROTECTIVE EQUIPMENT:</b>	No special equipment is usually needed when occasionally handling the product. <u>General safety clothing and equipment:</u> EYES: Safety goggles. CLOTHING: Impermeable overalls and protective footwear. GLOVES: Chemical resistant gloves. RESPIRATORY: Face mask / self-breathing apparatus.

## 9. PHYSICAL and CHEMICAL PROPERTIES

<b>PHYSICAL STATE:</b>	White suspension liquid
<b>ODOUR:</b>	Organic odour
<b>FORMULATION TYPE:</b>	Suspension concentrate (SC)
<b>pH:</b>	6.5 – 8.5 (undiluted) (CIPAC Method 75.3)
<b>Density:</b>	~ 1.08 g/ml (Gravimetric)
<b>Viscosity:</b>	962.3 mPa/s
<b>Pourability:</b>	2.15 % (CIPAC Method 148.1)
<b>Suspensibility:</b>	Epoxiconazole - In water: 91 – 96% (CIPAC Method 184) Carbendazim - In water; 96.5 – 101.0% (CIPAC Method 184)
<b>Wet Sieve:</b>	< 0.1% (75 µm sieve) (CIPAC Method 185)
<b>Particle size:</b>	D50 % = 2.559; D90 = 5.007
<b>Persistent foam:</b>	15 ml foam after 1 minute @ dilution rate: 1.2L in 40 L water (CIPAC Method 47.2)
<b>Low temp Stability:</b>	No separated material was visible. (CIPAC Method 39.2)

## 10. STABILITY AND REACTIVITY

<b>CHEMICAL STABILITY:</b>	This product is unlikely to react or decompose under normal storage conditions.
<b>CONDITIONS TO AVOID:</b>	Abnormal storage conditions.
<b>INCOMPATIBLE MATERIALS:</b>	Strong bases.
<b>HAZARDOUS Decomposition:</b>	No data available.
<b>HAZARDOUS Polymerization:</b>	Will not occur.

## 11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY DATA (TECHNICAL)		
<b>ACUTE ORAL:</b>	LD <sub>50</sub> rat	M = > 3000mg/kg; F = > 5000mg/kg (Epoxiconazole) > 6400mg/kg (Carbendazim)
<b>ACUTE DERMAL:</b>	LD <sub>50</sub> rat	> 2000mg/kg (Epoxiconazole) > 2000 mg/kg (Carbendazim)
<b>ACUTE INHALATION:</b>	LC <sub>50</sub> rat	> 5.3 mg/L (Epoxiconazole) > 5.6 mg/L (Carbendazim)
<b>SKIN IRRITATION:</b>	Rabbit	No irritation observed (Epoxiconazole) Non-irritant (Carbendazim)
<b>EYE IRRITATION:</b>	Rabbit	Irritation cleared by 72 hours. (Epoxiconazole) Slight irritant (Carbendazim)
<b>SENSITISATION:</b>	Guinea pig	Non sensitizer (Epoxiconazole) Non-sensitizer (Carbendazim)

## 12. ECOLOGICAL INFORMATION

**Very toxic to aquatic organisms and may cause adverse effects in the aquatic environment.  
DO NOT contaminate streams, rivers or waterways with this chemical or the used containers.**

### ECOTOXICITY:

#### Toxicity to Fish and other aquatic organisms:

Rainbow trout: Acute LC<sub>50</sub> (96hr) = 3.14 mg l<sup>-1</sup>.

Rainbow trout: Chronic NOEC (21 day) = 0.01 mg l<sup>-1</sup>.

Daphnia magna: Acute EC<sub>50</sub> (48h) = 8.69 mg l<sup>-1</sup>.

Algae: Acute EC<sub>50</sub> (72h) growth = 1.19 mg l<sup>-1</sup>

(*Carbendazim* = Highly acutely toxic to channel catfish, aquatic invertebrates, mysid shrimp and rainbow trout.)

#### Toxicity to Birds (avian):

Bobwhite quail: Acute LD<sub>50</sub> > 2000 mg kg<sup>-1</sup> (moderate);

Short term (dietary) LC<sub>50</sub> = > 907 mg/kg bw/day;

(*Carbendazim* = Low toxicity for birds)

#### Bees:

Honeybees: Acute LD<sub>50</sub> (48h) = > 83 (µg bee<sup>-1</sup>)

(*Carbendazim* = Moderate toxicity for honeybees.)

#### Toxicity to earthworms and soil micro-organisms:

Earthworms - Acute 14 day LC<sub>50</sub> = > 500 mg kg<sup>-1</sup>.

(*Carbendazim* = High toxicity for earthworms))

### PERSISTENCE, DEGRADABILITY and MOBILITY:

In soil, epoxiconazole exhibits medium to very high persistence. It is quite stable at soil surface of the soil photolysis study and no metabolites appeared in amounts greater than 1% of the applied radioactivity. Epoxiconazole is slightly too moderately absorbed to soil and the leaching potential is low; it is not readily biodegradable.

## 13. DISPOSAL CONSIDERATIONS

Do not use fungicide containers or packaging material for storing water or food. Triple or preferable pressure rinse empty containers with clean water before disposal. Add rinsing to spray/mixing tank. Do not dispose of undiluted chemical on-site. If recycling, replace cap and return clean containers to recycler or designated collection point. IF NOT recycling, break crush or puncture and bury empty containers in a local authority landfill. If no landfill is available bury the containers below 500mm in a disposal pit specifically marked and set up for this purpose clear of any water source (river, dam, spring, or borehole). Empty containers and product should not be burnt.

## 14. TRANSPORT INFORMATION

**UN Number:** 3082  
**Proper shipping Name** Environmentally hazardous substance, liquid, n.o.s.  
**Dangerous Goods Class** 9  
**Packing Group** III (minor danger)

## 15. REGULATORY INFORMATION

**Poisons Schedule No.:** S5(According to *Standard for the Uniform Scheduling of Drugs and Poisons* established under the Therapeutic Goods Act Australia (1989).

## 16. OTHER INFORMATION

The information contained in this Material Safety Data Sheet is provided in good faith and is believed to be correct at the date hereof. The information is intended to provide general guidance as to the health and safety hazard information of the product and how to safely handle and use the product in the workplace. However, it is expected that individuals receiving the information will exercise their independent judgement in determining its appropriateness for a particular purpose. ICA makes no representation as to the accuracy or comprehensiveness of the information and to the full extent allowed by law, excludes all liability whatsoever, whether with respect to negligence or unusual or non-standard uses of the product or use of the information supply in this Material Safety Data Sheet. Please read all labels carefully before using product. Care for the environment is essential for our future.

**Abbr. and Acronyms:**

ADG:	Australian Dangerous Goods Code, Rail & road 6 <sup>th</sup> edition
APVMA:	Australian Pesticide and Veterinary Medicines Authority
CAS Number:	Chemical Abstract Service Registry Number
NOHSC:	National Occupational Health and Safety Commission
SUSDP:	Standard for the Uniform Scheduling of Drugs and Poisons

This MSDS is valid for three years from date of issue

END of MSDS