	<b>MATERIAL SAFETY DATA SHEET - MSDS</b>	<b>Pages: 01/06</b>
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<b>PRODUCT: SOPRANO C</b>		

## 1. MATERIAL IDENTIFICATION

**Trade Name:** SOPRANO C

**Company:** Milenia Agro Ciências S/A

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**Date Prepared:** November 2000.

**Date Revised:** December 2000.

## 2. COMPOSITION AND INFORMATION ON INGREDIENTS

### Chemical

(2RS,3SR)-1-[3-(2-chlorophenyl)-2,3-epoxy-2-(4-fluorophenyl)-2-[(1H-1,2,4-triazol-1-yl)methyl]oxirane (Epoxiconazol) and methyl benzimidazol-2-ylcarbamate (Carbendazim)

**Common Name:** Epoxiconazole (BSI, pa ISO) and Carbendazim (BSI, E-ISO), Carbendazime((f)F-ISO), Carbendazol (JMAF)

**Synonym:** Epoxiconazol and Carbendazim

**Chemical Formula:** C<sub>17</sub>H<sub>13</sub>ClFN<sub>3</sub>O (Epoxiconazol) and C<sub>9</sub>H<sub>9</sub>N<sub>3</sub>O<sub>2</sub> (Carbendazim)

**Molecular Weight:** 329,8 (Epoxiconazol) and 191,2 (Carbendazim)

**Chemical Group:** azole (Epoxiconazol) and benzimidazole (Carbendazim)

**Formulation type:** Suspension Concentrate (SC)

**Name:**

Product	Amount	CAS Number
Epoxiconazol	125 g/L	106325-08-0
Carbendazim	125 g/L	10605-21-7
Inerts to	1000 ml	--

## 3. HAZARD IDENTIFICATION

Soprano is an fungicide, flammable liquid, white, with characteristic odor. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

The primary route of exposure is the eye or dermal contact, inhalation and ingestion.

## 4. FIRST - AID MEASURES

**ATTENTION:** In case the victim is unconscious, never administer anything orally. Seek for a medical aid taking MSDS, Direction, label or Emergency Recommendation.


**Inhalation:** Remove the victim to a well-ventilated place Seek for medical assistance.

**Ingestion:** Wash immediately with abundant water and seek immediately for medical assistance.

**Eye contact:** Wash immediately with abundant water for at least 15 minutes with eye lid open. Seek for medical assistance.

**Skin:** Remove and isolate immediately, contaminated clothes and shoes and wash the body parts affected with abundant water. If the irritation persists seek for medical assistance.

**Medical Information** – Therapeutical Measures, must be administered according to the doctor and it involves gastric wash one hour after ingestion and the washing up of the parts of the body which were affected, giving special attention to the regions that may retain the product. Antidote: Use

 <b>MILENIA</b> <small>AGROCIÊNCIAS S.A.</small>	<b>MATERIAL SAFETY DATA SHEET - MSDS</b>	<b>Pages: 02/06</b>
	<b>MILENIA AGRO CI NCIAS S.A.</b> Address: Pedro Ant9nio de Souza, 400 - Londrina - PR - Brazil - CEP 86031-610 Phone: 0055 43 371 9000 - Londrina - PR / 00 55 51 653 1277 Taquari - RS Fax: 0055 43 371 9011 E-mail: <a href="mailto:milenia@milenia.com.br">milenia@milenia.com.br</a> / <a href="http://www.milenia.com.br">http://www.milenia.com.br</a>	<b>Date Prepared:</b> 11/2000  <b>Date Revised:</b> 12/2000
<b>PRODUCT: SOPRANO C</b>		

antidotes that have wide action, and that may change the toxicocinetic and toxicodynamic of the product.

## 5. FIRE - FIGHTING MEASURES

**Extinguishing Agents:** For small fires, use chemical powder, CO<sub>2</sub>.

**Incompatible Extinguishing Media:** Avoid water jet.

**Hazard Substances from Combustion:** CO, CO<sub>2</sub>, NO<sub>x</sub>, HCl, HF and unidentifiable organic substances.

**Special Precautions:** A face shield should be worn. Fire fighters should wear butyl rubber boots, gloves, and body suit and a self-contained breathing apparatus. Water spray may be used to cool closed containers exposed to fire. Retain expanded liquids from fire fighting for later disposal. Empty drums may contain explosive vapors.

**Other Information:** May generate carbon monoxide gas and toxic or irritating combustion products. Downwind people must be evacuated. Skin contact with the product must be prevented. This product is combustible and it is a flammable liquid must be retained with embankment.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions** - Wear appropriate Personal Protective Equipment - Butyl or Latex protective clothing, rubber boots and full-face shield with goggles. Remove ignition sources. If there are no risks, eliminate spill using appropriate Personal Protective Equipment.

**Environmental Precautions** - Isolate the area and keep away from drains, surface and ground water and soil. Build earth dikes in order to prevent the spill within certain limits.

**Methods for cleaning up** - Clean up contaminated area-recovering wastes for later disposal. Retain the product using land or embankment. If available, use plastic tarpaulin to cover the ground. Collect the wastewater into clean vessels with lids.

## 7. HANDLING AND STORAGE

**Handling:** Avoid contact with skin, eyes or swallowing dust. Handle in well-ventilated workspace. When handling, do not eat, drink or smoke.

**Storage:** Keep away far from strong acid and oxidizing products. Keep the product in the original drums. Risk's signaling should be used for proper storage. Store in containers in a place surrounded by dikes to prevent spills or leaks. Keep in cool, dry, ventilated (<50°C) store and in closed containers. Once the package is open use it all.

**Incompatibles products and materials:** Storage far from strong acids, alkalines products and oxidizing products.

**Safety materials for recommended packaging:** ND

**Other precautions:** Emergency showers and eye wash stations should be readily accessible.


## 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

**Engineering's Control Methods:** Facilities storing or utilizing this material should be equipped with an eyewash facility and safety shower.

**Respiratory Protection:** Chemical cartridge respirator with face shield to protect against organic vapor. In severe cases, it is recommended the use of self-contained breathing apparatus in pressure demand mode.

**Hand Protection:** Impermeable rubber, PVC, or nitrile gloves with long glove protection.

**Eye Protection:** Special goggles must be used or face shield.

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	<b>MILENIA AGRO CI NCIAS S.A.</b> Address: Pedro Ant9nio de Souza, 400 - Londrina - PR - Brazil - CEP 86031-610 Phone: 0055 43 371 9000 - Londrina - PR / 00 55 51 653 1277 Taquari - RS Fax: 0055 43 371 9011 E-mail: milenia@milenia.com.br / http://www.milenia.com.br	<b>Date Prepared: 11/2000</b>  <b>Date Revised: 12/2000</b>
<b>PRODUCT: SOPRANO C</b>		

**Skin Protection:** Use PVC full protective clothing

**Protective Clothing:** Protective clothing is always recommended and includes pants, long sleeves, gloves, helmet, boots and respiratory protection. Wash with abundant water after handling the product and before eating, drinking water and smoking. Change gloves frequently. Highly contaminated clothes and gloves should be discarded.

**Work and hygienic practices:** Provide readily accessible eye wash stations and safety showers. Wash after each work shift and before eating, smoking or using the toilet. Promptly remove clothing that becomes contaminated. Discard contaminated leather articles. Launder or discard contaminated clothing.

**Occupational Exposing Limits:** ND

**Biological Indicators:** ND

## 9. PHYSICAL AND CHEMICAL PROPERTIES


<b>Physical State:</b>	Liquid
<b>Color:</b>	White
<b>Odor:</b>	Characteristic odour - aromatic
<b>pH:</b>	5 - 7 at a temperature of 20°C
<b>Boiling point:</b>	ND
<b>Melting Point:</b>	Epoxiconazol: 136.1 - 137.6°C (active ingredient) (1) Carbendazim: 301 - 307°C (active ingredient) (1)
<b>Decomposition Temperature:</b>	ND
<b>Destillation Rate:</b>	ND
<b>Flash Point:</b>	> 61 °C
<b>Ignition Temperature:</b>	Not explosive
<b>Explosion Limits:</b>	<b>Lower:</b> ND <b>Upper:</b> ND
<b>Vapor Pressure (mmHg at 20°C):</b>	ND
<b>Vapor Density (air=1):</b>	ND
<b>Density:</b>	ND
<b>Solubility in Water:</b>	Dispersible
<b>Solubility in other solvent:</b>	ND
<b>Partition Coefficient: octanol/water:</b>	ND
<b>Evaporation Tax:</b>	ND
<b>Corrosion:</b>	ND
<b>Specific Gravity (water = 1,0 20°C):</b>	1.08 - 1.10 Kg/L at a temperature of 20 °C
<b>Viscosity</b>	1500 – 4000 cP (20 rpm)

## 10. STABILITY AND REACTIVITY

<b>Stability:</b>	Stable under normal conditions
<b>Reacts Dangerously With:</b>	ND
<b>Hazardous Decomposition Products:</b>	CO, CO <sub>2</sub> , NO <sub>x</sub> , HCl, HF
<b>Conditions to Avoid:</b>	Protect from (sun) light, open flame and sources of heat. Decomposes upon heating.
<b>Incompatible Materials and Substances:</b>	ND
<b>Additives e Inhibitings:</b>	ND

## 11. TOXICOLOGICAL INFORMATION

For more information, refer to Section III – Hazard Identification.

	<b>MATERIAL SAFETY DATA SHEET - MSDS</b>	<b>Pages: 04/06</b>
	<b>MILENIA AGRO CI NCIAS S.A.</b> Address: Pedro Ant9nio de Souza, 400 - Londrina - PR - Brazil - CEP 86031-610 Phone: 0055 43 371 9000 - Londrina - PR / 00 55 51 653 1277 Taquari - RS Fax: 0055 43 371 9011 E-mail: <a href="mailto:milenia@milenia.com.br">milenia@milenia.com.br</a> / <a href="http://www.milenia.com.br">http://www.milenia.com.br</a>	<b>Date Prepared:</b> 11/2000  <b>Date Revised:</b> 12/2000
<b>PRODUCT: SOPRANO C</b>		

**Acute Oral Toxicity ( LD50, Rat):** Acute oral LD<sub>50</sub> for rats >5000 mg/kg<sub>(active ingredient epoxiconazol)(1)</sub>  
 Acute oral LD<sub>50</sub> for rats >15 000, dogs >2500 mg/kg<sub>(active ingredient carbendazim)(1)</sub>

**Acute Dermal Toxicity (LD50, Rat):** Acute percutaneous LD<sub>50</sub> for rats >2000 mg/kg.  
 (active ingredient epoxiconazol)(1)  
 Acute percutaneous LD<sub>50</sub> for rabbits >10 000, rats >2000 mg/kg. (active ingredient carbendazim)(1)

**Acute Inhalation Toxicity (LC50, Rat):** LC<sub>50</sub> (4 h) for rats >5.3 mg/l air<sub>(active ingredient epoxiconazol)(1)</sub>  
 LC<sub>50</sub> (4 h) for rats, rabbits, guinea pigs or cats, no effect with suspension (10 g/l water) (active ingredient carbendazim)(1)

**Local Effects, Eye irritation:** Non-irritating to eyes, (rabbit)  
**Local Effects, Skin irritation:** Non-irritating to skin, (rabbit)  
**Different Exposure Routes:** The primary route of exposure is the eye or dermal contact, inhalation and ingestion.

**Skin sensitization:** Guinea pig maximization test: Non sensitizer.  
**Mutagenicity:** ND  
**Teratogenicity:** ND  
**Reproduction:** ND  
**Carcinogenicity:** ND  
**Chronic Toxicity:** ND  
**Substances that causes additive effects:** ND

## 12. ECOLOGICAL INFORMATION


**Soil effects:** Degradation in soil is by microbial activity. (active ingredient epoxiconazol)(1)  
 2-Aminobenzimidazole has been found as a minor metabolite. DT<sub>50</sub> in soil 8-32 d under outdoor conditions.  
 (active ingredient carbendazim)(1)

**Mobility:** ND

**Persistence / degradability** Degradation: DT<sub>50</sub> c. 2-3 mo. K<sub>oc</sub> 957-2647. (active ingredient epoxiconazol)(1)  
 Carbendazim decomposes in the environment, DT<sub>50</sub> 6 to 12 mo on bare soil, 3 to 6 mo on turf, and 2 to 25 mo in water under aerobic and anaerobic conditions, respectively. It is mainly decomposed by micro-organisms. K<sub>oc</sub> 200-250. (active ingredient carbendazim)(1)

**Water effects:** ND

**Bioaccumulation:** **Plants:** There is extensive degradation<sub>(active ingredient epoxiconazol)(1)</sub>  
**Animals** In male rats, following a single oral administration of 3 mg/kg, 66% was eliminated in the urine within 6 hours. **Plants** Readily absorbed by plants. One degradation product is 2-aminobenzimidazole. (active

 <b>MILENIA</b> <small>AGRO CI NCIAS S.A.</small>	<b>MATERIAL SAFETY DATA SHEET - MSDS</b>	<b>Pages: 05/06</b>
	<b>MILENIA AGRO CI NCIAS S.A.</b> Address: Pedro Antnio de Souza, 400 - Londrina - PR - Brazil - CEP 86031-610 Phone: 0055 43 371 9000 - Londrina - PR / 00 55 51 653 1277 Taquari - RS Fax: 0055 43 371 9011 E-mail: <a href="mailto:milenia@milenia.com.br">milenia@milenia.com.br</a> / <a href="http://www.milenia.com.br">http://www.milenia.com.br</a>	<b>Date Prepared: 11/2000</b>  <b>Date Revised: 12/2000</b>

**PRODUCT: SOPRANO C**

<b>Acute toxicity fish:</b>	ingredient carbendazim)(1) LC <sub>50</sub> (96 h) for trout 2.2-4.6, bluegill sunfish 4.6-6.8 mg/kg
	active ingredient epoxiconazol)(1) LC <sub>50</sub> (96 h) for carp 0.61, rainbow trout 0.83, bluegill sunfish >17.25, guppy >8 mg/l. (active ingredient carbendazim)(1)
<b>Acute toxicity Daphnia:</b>	LC <sub>50</sub> (48 h) 8.7 mg/l active ingredient epoxiconazol)(1) LC <sub>50</sub> (48 h) 0.13-0.22 mg/l (active ingredient carbendazim)(1)
<b>Acute toxicity algae:</b>	EC <sub>50</sub> (72 h) for green algae 2.3 mg/l active ingredient epoxiconazol)(1) EC <sub>50</sub> (72 h) for <i>Scenedesmus subspicatus</i> 419, <i>Selenastrum capricornutum</i> 1.3 mg/l.
<b>Acute toxicity bee:</b>	(active ingredient carbendazim)(1) LD <sub>50</sub> >100 µg/bee active ingredient epoxiconazol)(1) LD <sub>50</sub> (contact) >50 µg/bee (active ingredient carbendazim)(1)
<b>Acute toxicity <i>Eisenia foetida</i>:</b>	ND
This product classified as <b>marine pollutant</b>	

**13. DISPOSAL CONSIDERATIONS**

<b>Product disposal:</b>	Recover or recycle if possible or incinerate it. Dispose to licensed disposal contractor
<b>Container disposal:</b>	Drain container thoroughly. Rinse three times with water. Treat rinsing as for product disposal. Send to drum recoverer or metal reclaimer.
<b>Local legislation:</b>	Comply with all federal state and local regulations. Material contaminated with this product may be landfilled at appropriate permitted facilities.

**14. TRANSPORT INFORMATION**

<b>(ADR) Classification UN n°:</b>	Non-hazardous goods.
<b>IATA Classification UN n°:</b>	Non-hazardous goods.
<b>I.M.O. Classification UN n°:</b>	Non-hazardous goods.

**15. REGULATORY INFORMATION**

<b>Exposure Guidelines:</b>	
ADI:	ND
RfD:	ND
PEL:	ND
NOEL:	ND
TLV:	ND
EPA:	ND

**RISK SYMBOLS**

Symbol	Meaning
Xn	Harmful