

1 Identification

· Product identifier

· Trade name: **Domark® 230 ME Fungicide**

EPA Registration No.: 80289-7-10163

· CAS Number: Active Ingredient: Tetraconazole (20.5%), CAS:112281-77-3

· Application of the substance / the mixture

Agricultural fungicide

Restrictions on use: See product label for restrictions.

· Details of the supplier of the safety data sheet

· Manufacturer/Supplier:

Isagro S.p.A. (d/b/a Isagro USA, Inc.)

430 Davis Drive, Suite 240

Morrisville, NC 27560

Tel: 919-321-5200

Distributed by:

Gowan Company

P.O. Box 5569

Yuma, Arizona 85366-5569

Tel. (928) 783-8844

· Information department: sds@gowanco.com

· Emergency telephone number:

Chemtrec® Emergency Telephone 24 - Hours: (Spills, leak or fire) Inside U.S. & Canada: (800) 424-9300

Outside the U.S. & Canada: +011 (703) 527-3887

For medical emergency (Prosar®): (888) 478-0798

2 Hazard(s) identification

· Classification of the substance or mixture



Acute Tox. 4 H302 Harmful if swallowed.

· Label elements

· GHS label elements

The product is classified and labeled according to the Globally Harmonized System (GHS).

· Hazard pictograms



GHS07

· Signal word Warning

· Hazard-determining components of labeling:

Tetraconazole

· Hazard statements

Harmful if swallowed.

· Precautionary statements

Wash thoroughly after handling.

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· **Hazard description:**

Harmful if swallowed, inhaled or absorbed through the skin. Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 1
 Fire = 0
 Reactivity = 0

HAZARD INDEX:

4 Severe Hazard
 3 Serious Hazard
 2 Moderate Hazard
 1 Slight Hazard
 0 Minimal Hazard

· **HMIS-ratings (scale 0 - 4)**



Health = 1
 Fire = 0
 Reactivity = 0

HAZARD INDEX:

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· **Other hazards**

· **Results of PBT and vPvB assessment**

- **PBT:** Not applicable in US.
- **vPvB:** Not applicable in US.

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**

· **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**

112281-77-3	Tetraconazole	20.5%
	⚠ Aquatic Chronic 2, H411; ⚠ Acute Tox. 4, H302; Acute Tox. 4, H332	

4 First-aid measures

· **Description of first aid measures**

· **General information:**

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

You may also contact 1-888-478-0798 for emergency medical treatment information.

· **After inhalation:**

- Move person to fresh air.
- If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.

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- Call poison control center or doctor for further treatment advice.
- **After skin contact:**
 - Take off contaminated clothing.
 - Rinse skin immediately with plenty of water for 15-20 minutes.
 - Call a poison control center or doctor for treatment advice.
- **After eye contact:**
 - Hold eye open and rinse slowly and gently with water for 15-20 minutes.
 - Remove contact lenses, if present, after first 5 minutes, then continue rinsing eyes.
 - Call a poison control center or doctor for treatment advice.
- **After swallowing:**
 - Call a poison control center or doctor immediately for treatment advice.
 - Have person sip a glass of water if able to swallow.
 - Do not induce vomiting unless told to do so by a poison control center or doctor.
 - Do not give anything to an unconscious person.
- **Information for doctor:**
 - **Most important symptoms and effects, both acute and delayed** Unknown
 - **Indication of any immediate medical attention and special treatment needed** None

* 5 Fire-fighting measures

- **Extinguishing media**
 - **Suitable extinguishing agents:**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture**
 - Carbon monoxide (CO)
 - Sulphur oxides (SO_x)
 - Hydrogen chloride (HCl)
 - Nitrogen oxides (NO_x)
- **Advice for firefighters**
Fight fire upwind. Avoid heavy base streams. Dike area to prevent water runoff. Vapor and fumes from fire are hazardous. Evacuate people downwind from fire.
 - **Protective equipment:** Wear self-contained respiratory protective device.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**
Do not allow to enter sewers/ surface or ground water.
This product is toxic to fish and aquatic invertebrates. Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

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7 Handling and storage

· Handling:

· Precautions for safe handling

Harmful if swallowed, inhaled or absorbed through the skin. Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

Remove Personal Protective Equipment (PPE) immediately after handling this product. Before removing gloves, clean then with soap and water. Remove soiled clothing immediately and clean thoroughly before using again. Wash thoroughly and put on clean clothing.

· **Information about protection against explosions and fires:** Keep ignition sources away - Do not smoke.

· Conditions for safe storage, including any incompatibilities

· Storage:

· Requirements to be met by storerooms and receptacles:

Store in original container in a dry, temperature-controlled, secure, place.

· **Information about storage in one common storage facility:** Store away from foodstuffs.

· **Further information about storage conditions:** None.

· **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see item 7.

· Control parameters

· Components with limit values that require monitoring at the workplace:

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

· **Additional information:** The lists that were valid during the creation were used as basis.

· Exposure controls

· Personal protective equipment:

· General protective and hygienic measures:

Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.

Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

· **Breathing equipment:** Not required.

· Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

· Material of gloves

Chemical resistant gloves (barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, polyvinyl rubber, and Viton) made of any water proof material

· Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· Body protection:

• Long sleeved shirt and long pants

• Shoes plus socks

• Chemical resistant gloves (barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, polyvinyl

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rubber, and Viton) made of any water proof material

Keep and wash PPE separately from other laundry

9 Physical and chemical properties

· Information on basic physical and chemical properties

· General Information

· Appearance:

- **Form:** Liquid
- **Color:** Light yellow
- **Odor:** Characteristic
- **Odor threshold:** Not determined.

· **pH-value at 20 °C (68 °F):** 6-8

· Change in condition

- **Melting point/Melting range:** Undetermined.
- **Boiling point/Boiling range:** Undetermined.

· **Flash point:** Not applicable.

· **Flammability (solid, gaseous):** Not applicable.

· Ignition temperature:

- **Decomposition temperature:** Not determined.

· **Danger of explosion:** Product does not present an explosion hazard.

· Explosion limits:

- **Lower:** Not determined.
- **Upper:** Not determined.

· **Vapor pressure:** Not determined.

· **Density at 20 °C (68 °F):** 1.12 g/cm³ (9.346 lbs/gal)

- **Relative density** Not determined.
- **Vapor density** Not determined.
- **Evaporation rate** Not determined.

· Solubility in / Miscibility with

- **Water:** Emulsifiable.

· **Partition coefficient (n-octanol/water):** Not determined.

· Viscosity:

- **Dynamic:** 580 cps
- **Kinematic:** Not determined.

· **Other information** No further relevant information available.

10 Stability and reactivity

· **Reactivity** No further relevant information available.

· **Chemical stability** Stable under normal conditions

· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

· **Possibility of hazardous reactions** No dangerous reactions known.

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- **Conditions to avoid** Excessive heat.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:**
 - Carbon monoxide (CO)
 - Nitrogen oxides (NOx)
 - Sulfur oxides (SOx)
 - Hydrogen chloride (HCl)
 - Hydrogen fluoride (HF)
 - Hydrogen cyanide (HCN)

11 Toxicological information

· Information on toxicological effects

· Acute toxicity:

· LD/LC50 values that are relevant for classification:

Oral	LD50	>2000 mg/kg (rat)
Dermal	LD50	>5000 mg/kg (rat)
Inhalative	LC50/4 h	>3.68 mg/l (rat)

· Primary irritant effect:

- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.

· Additional toxicological information:

Tetraconazole:

Chronic Toxicity/Carcinogenic effect: Not likely to be carcinogenic to humans at levels that do not cause increased cell proliferation in the liver. The significance of the neoplastic effect in mouse liver is unknown

Reproductive Toxicity: No evidence of reproductive toxicity.

Teratogenic Effect: No teratogenic effect.

Mutagenic Effects: Not mutagenic effect.

· Carcinogenic categories

· IARC (International Agency for Research on Cancer)

None of the ingredients are listed.

· NTP (National Toxicology Program)

None of the ingredients are listed.

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients are listed.

12 Ecological information

· Toxicity

This product is toxic to fish and aquatic invertebrates. Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift or runoff from treated areas may be hazardous to aquatic organisms adjacent to treatment areas. Exercise caution when making applications of DOMARK, and do not apply when atmospheric conditions favor drift or runoff. Do not contaminate water when disposing of equipment wash waters or rinsate.

- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.

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· **Behavior in environmental systems:**

- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.

· **Other information:**

Ecotoxicological Information:

- Bluegill Sunfish LC50 (96h): 4.3 mg/L*
- Rainbow Trout LC50 (96h): 4.8 mg/L*
- Daphnia magna LC50 (48h): 3.0 mg/L*

Environmental Fate:

Tetraconazole:

- Stable to hydrolysis and not expected to be degradable by photolysis in water.*
- Not readily biodegradable.*
- Bioaccumulative potential : BCF = 35.7 (whole fish).*
- Soil Koc between 531 and 1922.*

· **Ecotoxicological effects:**

- **Remark:** Harmful to fish

· **Additional ecological information:**

· **General notes:**

- Water hazard class 1 (Self-assessment): slightly hazardous for water*
- Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.*
- Harmful to aquatic organisms*

· **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.
- **vPvB:** Not applicable.

· **Other adverse effects** No further relevant information available.

* 13 Disposal considerations

· **Waste treatment methods**

· **Recommendation:**

Waste resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

· **Uncleaned packagings:**

· **Recommendation:**

Empty the package completely and triple rinse container (or equivalent) promptly after emptying with water to be used for application. Then dispose of the empty container according to state and local regulations. Place in trash or offer for recycling if available or return it to the Seller, or, if allowed by state and local authorities, by burning. If burned stay out of smoke.

Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container one-fourth full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

* 14 Transport information

· **UN-Number**

· **DOT**

Not regulated

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· ADR, IMDG, IATA	UN3082
· UN proper shipping name	
· ADR	3082 Environmentally hazardous substances, liquid, n.o.s.
· IMDG	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Tetraconazole), MARINE POLLUTANT
· IATA	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
· Transport hazard class(es)	
· ADR, IMDG, IATA	
· Class	9 Miscellaneous dangerous substances and articles
· Label	9
· Packing group	
· ADR, IMDG, IATA	III
· Environmental hazards:	
· Marine pollutant:	Yes
	Symbol (fish and tree)
· Special marking (ADR):	Symbol (fish and tree)
· Special marking (IATA):	Symbol (fish and tree)
· Special precautions for user	Warning: Miscellaneous dangerous substances and articles
· EMS Number:	F-A,S-F
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable
· Transport/Additional information:	
· ADR	
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· UN "Model Regulation":	US DOT : Not regulated
	All Others: UN3082, Environmentally hazardous substances, liquid, n.o.s., 9, III

15 Regulatory information

· Safety, health and environmental regulations/legislation specific for the substance or mixture

EPA /FIFRA Information:

This chemical is a pesticide product registered by the Environmental Protection Agency (EPA) and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals.

The following is the hazard information as required on the pesticide label.

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· **SARA Title III**

· **Section 355 (extremely hazardous substances):**

None of the ingredients are listed.

· **Section 313 (Specific toxic chemical listings):**

None of the ingredients are listed.

· **TSCA (Toxic Substances Control Act):**

None of the ingredients are listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**

None of the ingredients are listed.

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients are listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients are listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

· **Carcinogenicity categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients are listed.

· **TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients are listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients are listed.

· **GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms**

Not applicable

· **Signal word:**

(US EPA) CAUTION

· **Hazard-determining components of labeling:**

Tetraconazole

· **Hazard statements**

Harmful if swallowed.

· **Precautionary statements**

Harmful if swallowed, inhaled or absorbed through the skin. Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

Wash thoroughly after handling.

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· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing SDS:** Supply Chain

· **Contact:** sds@gowanco.com

· **Date of preparation / last revision** 01/12/2016 / 9

· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Acute Tox. 4: Acute toxicity, Hazard Category 4

Aquatic Chronic 2: Hazardous to the aquatic environment - Chronic Hazard, Category 2

· **Sources** Domark® is a registered trademark of Isagro S.p.A.

· * **Data compared to the previous version altered.**

US