SAFETY DATA SHEET

RAXIL® PRO FUNGICIDE
Version 3.0 / CDN
102000020819

Revision Date: 09/21/2016
Print Date: 10/31/2016

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identifier
Trade name RAXIL® PRO FUNGICIDE
Product code (UVP) 79527713
SDS Number 102000020819
PCP Registration No. 30102

Relevant identified uses of the substance or mixture and uses advised against
Use Fungicide, Seed treatment
Restrictions on use See product label for restrictions.

Information on supplier
Supplier Bayer CropScience Inc
#200, 160 Quarry Park Blvd, SE
Calgary, Alberta T2C 3G3
Canada

Responsible Department Email: SDSINFO.BCS-NA@bayer.com

Emergency telephone no.
Emergency Telephone Number (24hr/ 7 days) 1-800-334-7577
Product Information Telephone Number 1-888-283-6847

SECTION 2: HAZARDS IDENTIFICATION

Classified in accordance with Part 2 of the Hazardous Products Regulations
Eye irritation: Category 2A
Acute toxicity(Inhalation): Category 4
Reproductive toxicity: Category 2

Labelling in accordance with Part 3 of the Hazardous Products Regulations

Signal word: Warning

Hazard statements
Causes serious eye irritation.
Harmful if inhaled.
Suspected of damaging fertility or the unborn child.
Precautionary statements
Wash thoroughly after handling.
Wear protective gloves/ protective clothing/ eye protection/ face protection.
Avoid breathing mist and spray.
Use only outdoors or in a well-ventilated area.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/ attention.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER/doctor/physician if you feel unwell.
IF exposed or concerned: Get medical advice/ attention.
Store locked up.
Dispose of contents/container in accordance with local regulation.

Hazards Not Otherwise Classified (HNOC)
No physical hazards not otherwise classified.
No health hazards not otherwise classified.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Hazardous Component Name</th>
<th>CAS-No.</th>
<th>Concentration % by weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tebuconazole</td>
<td>107534-96-3</td>
<td>0.29</td>
</tr>
<tr>
<td>Prothioconazole</td>
<td>178928-70-6</td>
<td>1.47</td>
</tr>
<tr>
<td>Metalaxyl</td>
<td>57837-19-1</td>
<td>0.59</td>
</tr>
<tr>
<td>Ethoxylated tallow alkyl amines</td>
<td>61791-26-2</td>
<td>5.0</td>
</tr>
</tbody>
</table>

SECTION 4: FIRST AID MEASURES

Description of first aid measures

General advice
When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.

Inhalation
Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a physician or poison control center immediately.

Skin contact
Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Call a physician or poison control center immediately.

Eye contact
Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a physician or poison control center immediately.
Ingestion: Call a physician or poison control center immediately. Rinse out mouth and give water in small sips to drink. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended.

Most important symptoms and effects, both acute and delayed:

Symptoms: To date no symptoms are known.

Indication of any immediate medical attention and special treatment needed:

Treatment: Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended. There is no specific antidote.

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media:

Suitable: Water spray, Foam, Carbon dioxide (CO2), Dry chemical

Unsuitable: High volume water jet

Special hazards arising from the substance or mixture:

Dangerous gases are evolved in the event of a fire.

Advice for firefighters:

Special protective equipment for firefighters:

Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.

Further information:

Keep out of smoke. Fight fire from upwind position. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses.

Flash point: > 93.4 °C

Auto-ignition temperature: No data available

Lower explosion limit: No data available

Upper explosion limit: No data available

Explosivity: Not applicable
SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Precautions
Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces.

Methods and materials for containment and cleaning up

Methods for cleaning up
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Collect and transfer the product into a properly labelled and tightly closed container. Clean contaminated floors and objects thoroughly, observing environmental regulations.

Additional advice
Use personal protective equipment. If material is accidentally spilled, do not allow to enter soil, waterways or waste water canal.

Reference to other sections
Information regarding safe handling, see section 7.
Information regarding personal protective equipment, see section 8.
Information regarding waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling
Maintain exposure levels below the exposure limit through the use of general and local exhaust ventilation. Handle and open container in a manner as to prevent spillage.

Hygiene measures
Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.
Remove Personal Protective Equipment (PPE) immediately after handling this product. Before removing gloves clean them with soap and water. Remove soiled clothing immediately and clean thoroughly before using again. Wash thoroughly and put on clean clothing.

Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers
Store in a cool, dry place and in such a manner as to prevent cross contamination with other crop protection products, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area. Protect from freezing.

Advice on common storage
Keep away from food, drink and animal feedingstuffs.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Control parameters</th>
<th>Update</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tebuconazole</td>
<td>107534-96-3</td>
<td>0.2 mg/m3</td>
<td></td>
<td>OES BCS*</td>
</tr>
</tbody>
</table>
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Prothioconazole 178928-70-6 1.4 mg/m³ (SK-ABS) OES BCS*
1,2-Propanediol (Aerosol.) 57-55-6 10 mg/m³ (TWAEV) 11 2010 CAD ON OEL
1,2-Propanediol (Vapor and aerosol.) 57-55-6 155 mg/m³/50 ppm (TWAEV) 06 2015 CAD ON OEL

*OES BCS: Internal Bayer CropScience "Occupational Exposure Standard"

Exposure controls

Personal protective equipment
In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the following recommendations would apply.

Respiratory protection
When respirators are required, select NIOSH approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industry recommendations.

Hand protection
Chemical resistant nitrile rubber gloves

Eye protection
Safety glasses / Face shield

Skin and body protection
Wear long-sleeved shirt and long pants and shoes plus socks.

General protective measures
Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and warm/tepid water.
Keep and wash PPE separately from other laundry.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance red
Physical State Liquid
Odor characteristic
Odour Threshold No data available
pH 7.20 - 8.80 at 100 % (23 °C)
Vapor Pressure No data available
Vapor Density (Air = 1) No data available
Density 1.04 g/cm³ at 20 °C
Evaporation rate No data available
Boiling Point No data available
Melting / Freezing Point No data available
Water solubility dispersible
Minimum Ignition Energy: Not applicable
Decomposition temperature: No data available
Partition coefficient: n-octanol/water: No data available
Flash point: > 93.4 °C
Auto-ignition temperature: No data available
Lower explosion limit: No data available
Upper explosion limit: No data available
Explosivity: Not applicable

SECTION 10: STABILITY AND REACTIVITY

Reactivity
Thermal decomposition: No data available
Chemical stability: Stable under recommended storage conditions.
Possibility of hazardous reactions: No dangerous reaction known under conditions of normal use.
Conditions to avoid: freezing
Incompatible materials: No data available
Hazardous decomposition products: No decomposition products expected under normal conditions of use.

SECTION 11: TOXICOLOGICAL INFORMATION

Exposure routes: Eye contact, Ingestion, Inhalation, Skin Absorption
Immediate Effects
Eye: Causes substantial but temporary eye injury.
Skin: Harmful if absorbed through skin.
Ingestion: Harmful if swallowed.
Inhalation: Harmful if inhaled.
Information on toxicological effects
Acute oral toxicity: LD50 (female Rat) > 2,000 mg/kg
Acute inhalation toxicity: LC50 (Rat) > 2.6 mg/l
Exposure time: 4 h
Determined in the form of liquid aerosol.
highest concentration tested

**Acute dermal toxicity**

LD50 (Rat) > 5,000 mg/kg

**Skin irritation**

No skin irritation (Rabbit)

**Eye irritation**

Moderate eye irritation. (Rabbit)

**Sensitisation**

Non-sensitizing. (Guinea pig)

**Assessment STOT Specific target organ toxicity – repeated exposure**

Tebuconazole did not cause specific target organ toxicity in experimental animal studies.

Metalaxyl did not cause specific target organ toxicity in experimental animal studies.

Prothioconazole did not cause specific target organ toxicity in experimental animal studies.

**Assessment mutagenicity**

Tebuconazole was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

Metalaxyl was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

Prothioconazole was not mutagenic or genotoxic based on the overall weight of evidence in a battery of in vitro and in vivo tests.

**Assessment carcinogenicity**

Tebuconazole caused at high dose levels an increased incidence of tumours in mice in the following organ(s): Liver. The mechanism of tumour formation is not considered to be relevant to man.

Metalaxyl was not carcinogenic in lifetime feeding studies in rats and mice.

Prothioconazole was not carcinogenic in lifetime feeding studies in rats and mice.

**ACGIH**

None.

**NTP**

None.

**IARC**

None.

**OSHA**

None.

**Assessment toxicity to reproduction**

Tebuconazole caused reproduction toxicity in a two-generation study in rats only at dose levels also toxic to the parent animals. The reproduction toxicity seen with Tebuconazole is related to parental toxicity.

Metalaxyl did not cause reproductive toxicity in a multi-generation study in rats.

Prothioconazole caused reproduction toxicity in a two-generation study in rats only at dose levels also toxic to the parent animals. The reproduction toxicity seen with Prothioconazole is related to parental toxicity.

**Assessment developmental toxicity**

Tebuconazole caused developmental toxicity only at dose levels toxic to the dams. Tebuconazole caused an increased incidence of post implantation losses, an increased incidence of non-specific malformations.
Metalaxyl did not cause developmental toxicity in rats and rabbits.
Prothioconazole caused developmental toxicity only at dose levels toxic to the dams. The developmental effects seen with Prothioconazole are related to maternal toxicity.

Further information
Only acute toxicity studies have been performed on the formulated product. The non-acute information pertains to the active ingredient(s).

SECTION 12: ECOLOGICAL INFORMATION

Toxicity to fish
LC50 (Oncorhynchus mykiss (rainbow trout)) 1.83 mg/l
Exposure time: 96 h
The value mentioned relates to the active ingredient prothioconazole.

Toxicity to aquatic invertebrates
EC50 (Daphnia magna (Water flea)) 1.3 mg/l
Exposure time: 48 h
The value mentioned relates to the active ingredient prothioconazole.

Toxicity to aquatic plants
IC50 (Raphidocelis subcapitata (freshwater green alga)) 2.18 mg/l
Growth rate; Exposure time: 72 h
The value mentioned relates to the active ingredient prothioconazole.

Biodegradability
Tebuconazole: Not rapidly biodegradable
Metalaxyl: Not rapidly biodegradable
Prothioconazole: Not rapidly biodegradable

Koc
Tebuconazole: Koc: 769
Metalaxyl: Koc: 163
Prothioconazole: Koc: 1765; log Koc: < 3

Bioaccumulation
Tebuconazole: Bioconcentration factor (BCF) 35 - 59
Does not bioaccumulate.
Metalaxyl: Bioconcentration factor (BCF) < 7
Does not bioaccumulate.
Prothioconazole: Bioconcentration factor (BCF) 19
Does not bioaccumulate.

Mobility in soil
Tebuconazole: Slightly mobile in soils
Metalaxyl: Moderately mobile in soils
Prothioconazole: Slightly mobile in soils

Environmental precautions
Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark.
Drift and runoff from treated areas may be hazardous to aquatic organisms in adjacent sites.
Do not apply when weather conditions favor runoff or drift.
Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water.
Apply this product as specified on the label.
SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Product
Dispose in accordance with all local, state/provincial and federal regulations.
Follow container label instructions for disposal of wastes generated during use in compliance with the product label.
Do not contaminate water, food, or feed by disposal.

Contaminated packaging
Triple rinse containers.
Puncture container to avoid re-use.
Follow advice on product label and/or leaflet.

SECTION 14: TRANSPORT INFORMATION

TDG
UN number 3082
Labels 9
Packaging group III
Marine pollutant Marine pollutant
Proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (PROTHIOCONAZOLE)

IMDG
UN number 3082
Class 9
Packaging group III
Marine pollutant YES
Proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (PROTHIOCONAZOLE SOLUTION)

IATA
UN number 3082
Class 9
Packaging group III
Environm. Hazardous Mark YES
Proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (PROTHIOCONAZOLE SOLUTION)

This transportation information is not intended to convey all specific regulatory information relating to this product. It does not address regulatory variations due to package size or special transportation requirements.
Further Information
Exempt from regulation when transported by road or rail, in accordance with TDG Regulations 1.45.1. This exemption provides that this product does not require dangerous goods shipping documentation or safety marks when transported on land by road or rail.

Freight Classification: INSECTICIDES OR FUNGICIDES, N.O.I., OTHER THAN POISON

SECTION 15: REGULATORY INFORMATION

PCP Registration No. 30102
US Federal Regulations
TSCA list None.
US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D) None.
SARA Title III - Section 302 - Notification and Information None.
SARA Title III - Section 313 - Toxic Chemical Release Reporting None.
US States Regulatory Reporting
CA Prop65 This product does not contain any substances known to the State of California to cause cancer.
This product does not contain any substances known to the State of California to cause reproductive harm.

US State Right-To-Know Ingredients None.

Canadian Regulations
Canadian Domestic Substance List Ethoxylated tallow alkyl amines 61791-26-2

Environmental
CERCLA None.
Clean Water Section 307 Priority Pollutants None.
Safe Drinking Water Act Maximum Contaminant Levels Tebuconazole 107534-96-3
SECTION 16: OTHER INFORMATION

Abbreviations and acronyms
49CFR Code of Federal Regulations, Title 49
ACGIH US. ACGIH Threshold Limit Values
ATE Acute toxicity estimate
CAS-Nr. Chemical Abstracts Service number
CERCLA Comprehensive Environmental Response, Compensation, and Liability Act
EINECS European inventory of existing commercial substances
ELINCS European list of notified chemical substances
IARC International Agency for Research on Cancer
IATA International Air Transport Association
IMDG International Maritime Dangerous Goods
N.O.S. Not otherwise specified
NTP US. National Toxicology Program (NTP) Report on Carcinogens
OECD Organization for Economic Co-operation and Development
TDG Transportation of Dangerous Goods
TWA Time weighted average
UN United Nations
WHO World health organisation

NFPA 704 (National Fire Protection Association):
  Health - 2  Flammability - 1  Instability - 0  Others - none

  Health - 2  Flammability - 1  Physical Hazard - 0  PPE -

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Reason for Revision: The following sections have been revised: Section 2: Hazards Identification. Section 3: Composition / Information on Ingredients. Section 11: Toxicological Information.

Prepared by the HSE Department of Bayer CropScience Inc. (306)-721-0310.

Revision Date: 09/21/2016

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