



PROSARO® 421 SC FUNGICIDE

Version 3 / USA
102000014618

1/12
Revision Date: 01/27/2014
Print Date: 03/13/2015

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

Product identifier

Trade name	PROSARO® 421 SC FUNGICIDE
Product code (UVP)	06011496
SDS Number	102000014618
EPA Registration No.	264-862

Relevant identified uses of the substance or mixture and uses advised against

Use	Fungicide
Restrictions on use	See product label for restrictions.

Information on manufacturer

Bayer CropScience
2 T.W. Alexander Drive
Research Triangle PK, NC 27709
United States

Emergency telephone no.

All Emergencies, 24hr/ 7 days 1-800-334-7577

Product Information	1-866-99BAYER (1-866-992-2937)
Telephone No.	

SDS Information or Request SDSINFO.BCS-NA@bayer.com

SECTION 2: HAZARDS IDENTIFICATION

Classification in accordance with regulation HCS 29CFR §1910.1200

Reproductive toxicity : Category 2
Eye irritation : Category 2B
Acute toxicity (Inhalation): Category 4



Signal word: Warning

Hazard statements

Suspected of damaging fertility or the unborn child.
Causes eye irritation.
Harmful if inhaled.

Precautionary statements

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves/protective clothing/eye protection/face protection.
Wash thoroughly after handling.



PROSARO® 421 SC FUNGICIDE

Version 3 / USA
102000014618

2/12
Revision Date: 01/27/2014
Print Date: 03/13/2015

Avoid breathing mist or vapours.
Use only outdoors or in a well-ventilated area.
IF exposed or concerned: Get medical advice/attention.
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 victim to fresh air and keep at rest in a position comfortable for breathing.
Call a POISON CENTER or doctor/ physician if you feel unwell.
Store locked up.
Dispose of contents/container in accordance with local regulation.

Other hazards

No other hazards known.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Component Name	CAS-No.	Average % by Weight
Prothioconazole	178928-70-6	19.00
Tebuconazole	107534-96-3	19.00
Polyethylene-polypropylene copolymer	9003-11-6	5.00
Glycerine	56-81-5	3.00

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.
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PROSARO® 421 SC FUNGICIDE

Version 3 / USA
102000014618

3/12
Revision Date: 01/27/2014
Print Date: 03/13/2015

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.
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SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Suitable	Water, Foam, Carbon dioxide (CO ₂), Dry chemical
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Unsuitable	None known.
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Special hazards arising from the substance or mixture	In the event of fire the following may be released: Hydrogen chloride (HCl), Hydrogen cyanide (hydrocyanic acid), Carbon monoxide (CO), Sulphur oxides, Nitrogen oxides (NO _x)
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Advice for firefighters

Special protective equipment for fire-fighters	Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.
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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.
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Flash point	> 100 °C Not relevant; aqueous solution
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Autoignition temperature	no data available
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Lower explosion limit	no data available
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Upper explosion limit	no data available
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Explosivity	not applicable
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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.
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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.
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PROSARO® 421 SC FUNGICIDE

Version 3 / USA
102000014618

4/12
Revision Date: 01/27/2014
Print Date: 03/13/2015

Additional advice	Use personal protective equipment. Do not allow to enter soil, waterways or waste water canal. Do not allow product to contact non-target plants.
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 Handle and open container in a manner as to prevent spillage. Maintain exposure levels below the exposure limit through the use of general and local exhaust ventilation.

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.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Components	CAS-No.	Control parameters	Update	Basis
Prothioconazole	178928-70-6	1.4 mg/m ³ (TWA)		OES BCS*
Prothioconazole	178928-70-6	50 ug/m ³ (ST ESL)	07 2011	TX ESL
Prothioconazole	178928-70-6	5 ug/m ³ (AN ESL)	07 2011	TX ESL
Tebuconazole	107534-96-3	0.2 mg/m ³ (TWA)		OES BCS*
Tebuconazole	107534-96-3	5 ug/m ³ (AN ESL)	07 2011	TX ESL
Tebuconazole	107534-96-3	50 ug/m ³ (ST ESL)	07 2011	TX ESL



PROSARO® 421 SC FUNGICIDE

Version 3 / USA
102000014618

5/12
Revision Date: 01/27/2014
Print Date: 03/13/2015

Polyethylene-polypropylene copolymer (Vapor.)	9003-11-6	100 ug/m3 (AN ESL)	02 2013	TX ESL
Polyethylene-polypropylene copolymer (Vapor.)	9003-11-6	1000 ug/m3 (ST ESL)	02 2013	TX ESL
Glycerine (Total dust.)	56-81-5	15 mg/m3 (PEL)	02 2006	OSHA Z1
Glycerine (Respirable fraction.)	56-81-5	5 mg/m3 (PEL)	02 2006	OSHA Z1
Glycerine (Respirable fraction.)	56-81-5	5 mg/m3 (TWA)	1989	OSHA Z1A
Glycerine (Total dust.)	56-81-5	10 mg/m3 (TWA)	1989	OSHA Z1A
Glycerine (Total dust and mist.)	56-81-5	10 mg/m3 (TWA)	06 2008	TN OEL
Glycerine (Respirable fraction and dust or fume.)	56-81-5	5 mg/m3 (TWA)	06 2008	TN OEL
Glycerine (Particulate.)	56-81-5	50 ug/m3 (ST ESL)	02 2013	TX ESL
Glycerine (Particulate.)	56-81-5	5 ug/m3 (AN ESL)	02 2013	TX ESL
Glycerine (Vapor.)	56-81-5	100 ug/m3 (AN ESL)	02 2013	TX ESL
Glycerine (Vapor.)	56-81-5	1000 ug/m3 (ST ESL)	02 2013	TX ESL

*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

Goggles

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.



PROSARO® 421 SC FUNGICIDE

Version 3 / USA
102000014618

6/12
Revision Date: 01/27/2014
Print Date: 03/13/2015

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	white to light beige
Physical State	liquid suspension
Odor	characteristic
Odour Threshold	no data available
pH	7.5 - 7.9 (10 %) at 23 °C aqueous suspension
Vapor Pressure	no data available
Vapor Density (Air = 1)	no data available
Density	1.11 g/cm ³ at 20 °C
Evaporation rate	no data available
Boiling Point	no data available
Melting / Freezing Point	no data available
Water solubility	soluble
Minimum Ignition Energy	not applicable
Decomposition temperature	not applicable
Partition coefficient: n-octanol/water	no data available
Viscosity	500 - 1,500 mPa.s at 20 °C
Flash point	> 100 °C Not relevant; aqueous solution
Autoignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Explosivity	not applicable



PROSARO® 421 SC FUNGICIDE

Version 3 / USA
102000014618

7/12
Revision Date: 01/27/2014
Print Date: 03/13/2015

SECTION 10: STABILITY AND REACTIVITY

Reactivity

Thermal decomposition not applicable

Chemical stability Stable under normal conditions.

Possibility of hazardous reactions No hazardous reactions when stored and handled according to prescribed instructions.

Conditions to avoid Heat, flames and sparks.

Incompatible materials no data available

Hazardous decomposition products No decomposition products expected under normal conditions of use.

SECTION 11: TOXICOLOGICAL INFORMATION

Exposure routes Ingestion, Inhalation, Eye contact, Skin Absorption

Immediate Effects

Eye Moderate eye irritation.

Skin May cause slight irritation. 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) > 2.0 mg/l
Exposure time: 4 h
Determined in the form of liquid aerosol.
highest concentration tested
No deaths

LC50 (rat) > 8.0 mg/l
Exposure time: 1 h
Determined in the form of liquid aerosol.
Extrapolated from the 4 hr LC50.



PROSARO® 421 SC FUNGICIDE

Version 3 / USA
102000014618

8/12
Revision Date: 01/27/2014
Print Date: 03/13/2015

Acute dermal toxicity	LD50 (rat) > 2,000 mg/kg
Skin irritation	Slight irritation (rabbit)
Eye irritation	Minimally irritating. (rabbit)
Sensitisation	Non-sensitizing. (guinea pig)

Assessment repeated dose toxicity

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

Assessment Mutagenicity

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

Assessment Carcinogenicity

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

ACGIH

None.

NTP

None.

IARC

None.

OSHA

None.

Assessment toxicity to reproduction

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.
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.

Assessment developmental toxicity

Prothioconazole caused developmental toxicity only at dose levels toxic to the dams. The developmental effects seen with Prothioconazole are related to maternal 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.

Further information



PROSARO® 421 SC FUNGICIDE

Version 3 / USA
102000014618

9/12
Revision Date: 01/27/2014
Print Date: 03/13/2015

Acute toxicity studies have been bridged from a similar formulation(s).
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.

LC50 (Oncorhynchus mykiss (rainbow trout)) 4.4 mg/l
Exposure time: 96 h
The value mentioned relates to the active ingredient tebuconazole.

LC50 (Lepomis macrochirus (Bluegill sunfish)) 5.7 mg/l
Exposure time: 96 h
The value mentioned relates to the active ingredient tebuconazole.

**Toxicity to aquatic
invertebrates**

LC50 (Water flea (Daphnia magna)) 1.3 mg/l
Exposure time: 48 h
The value mentioned relates to the active ingredient
prothioconazole.

LC50 (Water flea (Daphnia magna)) 4.2 mg/l
Exposure time: 48 h
The value mentioned relates to the active ingredient tebuconazole.

Toxicity to aquatic plants

EC50 (Selenastrum capricornutum) 2.18 mg/l
Exposure time: 72 h
The value mentioned relates to the active ingredient
prothioconazole.

EC50 (Pseudokirchneriella subcapitata) 3.8 mg/l
Exposure time: 72 h
The value mentioned relates to the active ingredient tebuconazole.

Biodegradability

Prothioconazole: not rapidly biodegradable
Tebuconazole: not rapidly biodegradable

Koc

Prothioconazole: Koc:1765 log Koc: < 3
Tebuconazole: Koc:769

Bioaccumulation

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



PROSARO® 421 SC FUNGICIDE

Version 3 / USA
102000014618

10/12
Revision Date: 01/27/2014
Print Date: 03/13/2015

Mobility in soil	Prothioconazole: Slightly mobile in soils Tebuconazole: 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. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Drift and runoff from treated areas may be hazardous to aquatic organisms in adjacent sites. Apply this product as specified on the label.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Product	Pesticide, spray mixture or rinse water that cannot be used according to label instructions may be disposed of on site or at an approved waste disposal facility.
Contaminated packaging	Triple rinse containers. Dispose of empty container in a sanitary landfill or by incineration, or, if allowed by State/Provincial and local authorities, by burning. If burned, stay out of smoke. Follow advice on product label and/or leaflet.
RCRA Information	Characterization and proper disposal of this material as a special or hazardous waste is dependent upon Federal, State and local laws and are the user's responsibility. RCRA classification may apply.

SECTION 14: TRANSPORT INFORMATION

49CFR	Not dangerous goods / not hazardous material
IMDG	
UN number	3082
Class	9
Packaging group	III
Marine pollutant	YES
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (TEBUCONAZOLE, PROTHIOCONAZOLE SOLUTION)
IATA	
UN number	3082
Class	9
Packaging group	III



PROSARO® 421 SC FUNGICIDE

Version 3 / USA
102000014618

11/12
Revision Date: 01/27/2014
Print Date: 03/13/2015

Environm. Hazardous Mark YES
Proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S.
(TEBUCONAZOLE, 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.

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

SECTION 15: REGULATORY INFORMATION

EPA Registration No. 264-862

US Federal Regulations

TSCA list

Polyethylene-polypropylene copolymer 9003-11-6

Glycerine 56-81-5

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

Glycerine 56-81-5 MN

Canadian Regulations

Canadian Domestic Substance List

Polyethylene-polypropylene copolymer 9003-11-6

Glycerine 56-81-5

Environmental

CERCLA

None.

Clean Water Section 307 Priority Pollutants

None.

Safe Drinking Water Act Maximum Contaminant Levels

Tebuconazole 107534-96-3

International Regulations

European Inventory of Existing Commercial Substances (EINECS)



PROSARO® 421 SC FUNGICIDE

Version 3 / USA
102000014618

12/12
Revision Date: 01/27/2014
Print Date: 03/13/2015

Glycerine

56-81-5

EPA/FIFRA Information:

This chemical is a pesticide product registered by the Environmental Protection Agency 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. Following is the hazard information required on the pesticide label:

Signal word:

Caution!

Hazard statements:

Harmful if swallowed, inhaled or absorbed through the skin.
Moderate eye irritation.
Avoid contact with skin, eyes and clothing.
Avoid inhalation of vapour or mist.
Wash thoroughly with soap and water after handling.

SECTION 16: OTHER INFORMATION

NFPA 704 (National Fire Protection Association):

Health - 2

Flammability - 1

Instability - 0

Others - none

HMIS (Hazardous Materials Identification System, based on the Third Edition Ratings Guide)

Health - 1

Flammability - 1

Physical Hazard - 0

PPE -

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

Reason for Revision: Revised according to the current OSHA Hazard Communication Standard (29CFR1910.1200)

Revision Date: 01/27/2014

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