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

1.1 Product identifier

Trade name RAXIL STAR

Product code (UVP) 79463537

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

Use Seed treatment, Fungicide

EPA-Nr. HSR101132

1.3 Details of the supplier of the safety data sheet

Supplier
Bayer New Zealand Limited
CropScience Division
B:HIVE Building
74 Taharoto Rd
Smales Farm
Takapuna
Auckland, 0622
New Zealand

Telephone 0800 428 246

Telefax (09) 441 8645

1.4 Emergency telephone no.

Emergency Number 0800 734 607 (24hr)

Global Incident Response Hotline (24h) +1 (760) 476-3964 (Company 3E for Bayer AG, Crop Science Division)

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classified as hazardous according to the criteria in the Hazardous Substances (Minimum Degrees of Hazard) Notice 2020 as amended

Repr. 2
H361 Suspected of damaging fertility or the unborn child.

STOT RE 2
H373 May cause damage to organs through prolonged or repeated exposure if swallowed.

Aquatic Chronic

H411 Toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling in accordance with the Hazardous Substances (Safety Data Sheets) Notice 2020 as amended

Hazard label for supply/use required.

Signal word: Warning

Hazard statements

H373	May cause damage to organs through prolonged or repeated exposure if swallowed.
H361	Suspected of damaging fertility or the unborn child.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statements

P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P314	Get medical advice/ attention if you feel unwell.
P391	Collect spillage.
P410	Protect from sunlight.
P501	Dispose of contents/container in accordance with local regulation.

2.3 Other hazards

No additional hazards known beside those mentioned.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Chemical nature

Flowable concentrate for seed treatment (FS)
Fluopyram/Prothioconazole/Tebuconazole 20:100:60 g/l

Hazardous components

Chemical name	CAS-No.	Conc. [%]
Fluopyram	658066-35-4	1.72
Prothioconazole	178928-70-6	8.62
Tebuconazole	107534-96-3	5.17
cPoly(oxy-1,2-ethanediyl), .alpha.-sulfo-.omega.-[2,4,6-tris(1-phenylethyl)phenoxy]-, ammonium salt	119432-41-6	>= 1.00 – < 25.00
3-Hydroxy-2'-methyl-2-naphthanilide	135-61-5	>= 0.1 – < 1.0
1,2-Benzisothiazol-3(2H)-one	2634-33-5	>= 0.005 – < 0.05
reaction mass of 5-chloro-2- methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	55965-84-9	>= 0.00015 – < 0.0015
Glycerine	56-81-5	> 1.00

Further information

1,2-Benzisothiazol-3(2H)-one	2634-33-5	M-Factor: 1 (acute)

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

General advice Move out of dangerous area. Place and transport victim in stable position (lying sideways). Remove contaminated clothing immediately and dispose of safely.

Inhalation Move to fresh air. Keep patient warm and at rest. Call a physician or poison control center immediately.

Skin contact Wash off thoroughly with plenty of soap and water, if available with polyethyleneglycol 400, subsequently rinse with water. If symptoms persist, call a physician.

Eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Get medical attention if irritation develops and persists.

Ingestion Rinse mouth. Do NOT induce vomiting. Call a physician or poison control center immediately.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms No symptoms known or expected.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment Treat symptomatically. Gastric lavage is not normally required. However, if a significant amount (more than a mouthful) has been ingested, administer activated charcoal and sodium sulphate. There is no specific antidote.

Contact the National Poisons and Hazardous Chemicals Information center in Dunedin, PO Box 913, Dunedin. Phone 0800 POISON (0800 764 766).

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable Water spray, Carbon dioxide (CO2), Foam, Sand

Unsuitable High volume water jet

5.2 Special hazards arising from the substance or mixture	In the event of fire the following may be released:, Hydrogen cyanide (hydrocyanic acid), Hydrogen fluoride, Hydrogen chloride (HCl), Carbon monoxide (CO), Carbon dioxide (CO2), Nitrogen oxides (NOx), Sulphur oxides

5.3 Advice for firefighters

Special protective equipment for firefighters	In the event of fire and/or explosion do not breathe fumes. Wear self-contained breathing apparatus and protective suit.
Further information	Contain the spread of the fire-fighting media. Do not allow run-off from fire fighting to enter drains or water courses.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Precautions	Avoid contact with spilled product or contaminated surfaces. Use personal protective equipment.
6.2 Environmental precautions	Do not allow to get into surface water, drains and ground water.

6.3 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). Clean contaminated floors and objects thoroughly, observing environmental regulations. Collect and transfer the product into a properly labelled and tightly closed container.
6.4 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

7.1 Precautions for safe handling

Advice on safe handling	Use only in area provided with appropriate exhaust ventilation.
Hygiene measures	Avoid contact with skin, eyes and clothing. Keep working clothes separately. Wash hands before breaks and immediately after handling the product. Remove soiled clothing immediately and clean thoroughly before using again. Garments that cannot be cleaned must be destroyed (burnt).

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	Store in a place accessible by authorized persons only. Store in original container. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from direct sunlight.
Advice on common storage	Keep away from food, drink and animal feedingstuffs.
Suitable materials	HDPE (high density polyethylene) HDPE - steel case

HDPE (high density polyethylene) -fluorinated
Coex HDPE/EVOH
Coex HDPE/PA

7.3 Specific end use(s) Refer to the label and/or leaflet.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components	CAS-No.	Control parameters	Update	Basis
Fluopyram	658066-35-4	0.34 mg/m3 (TWA)		OES BCS*
Prothioconazole	178928-70-6	1.4 mg/m3 (SK-ABS)		OES BCS*
Tebuconazole	107534-96-3	0.2 mg/m3 (SK-ABS)		OES BCS*
Glycerine (Mist.)	56-81-5	10 mg/m3 (TWA)	06 2016	NZ OEL

*OES BCS: Internal Bayer AG, Crop Science Division "Occupational Exposure Standard"

8.2 Exposure controls

Personal protective equipment
Formulated product

Respiratory protection
Respiratory protection is not required under anticipated circumstances of exposure.
Respiratory protection should only be used to control residual risk of short duration activities, when all reasonably practicable steps have been taken to reduce exposure at source e.g. containment and/or local extract ventilation. Always follow respirator manufacturer's instructions regarding wearing and maintenance.

Hand protection
Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.
Wash gloves when contaminated. Dispose of when contaminated inside, when perforated or when contamination on the outside cannot be removed. Wash hands frequently and always before eating, drinking, smoking or using the toilet.

Material	Nitrile rubber
Rate of permeability	> 480 min
Glove thickness	> 0.4 mm
Protective index	Class 6
Directive	Protective gloves complying with EN 374.

Eye protection
Wear goggles (conforming to EN166, Field of Use = 5 or equivalent).

Skin and body protection
Wear standard coveralls and Category 3 Type 6 suit.
Wear two layers of clothing wherever possible. Polyester/cotton or

cotton overalls should be worn under chemical protection suit and should be professionally laundered frequently.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Form	suspension
Colour	red
Odour	weak, characteristic
Odour Threshold	No data available
pH	4.0 - 7.0 (100 %) (23 °C)
Melting point/range	No data available
Boiling Point	No data available
Flash point	Not relevant; aqueous solution
Flammability	No data available
Auto-ignition temperature	No data available
Thermal decomposition	No data available
Ignition temperature	475 °C
Minimum ignition energy	No data available
Self-accelarating decomposition temperature (SADT)	No data available
Upper explosion limit	No data available
Lower explosion limit	No data available
Vapour pressure	No data available
Evaporation rate	No data available
Relative vapour density	No data available
Relative density	No data available
Density	ca. 1.16 g/cm³ (20 °C)
Water solubility	No data available
Partition coefficient: n-octanol/water	Fluopyram: log Pow: 3.3 Tebuconazole: log Pow: 3.7 Prothioconazole: log Pow: 3.82 (20 °C) (pH 7)
Viscosity, dynamic	No data available
Viscosity, kinematic	No data available
Impact sensitivity	Not impact sensitive.

Oxidizing properties	No oxidizing properties
Explosivity	Not explosive 92/69/EEC, A.14 / OECD 113
9.2 Other information	Further safety related physical-chemical data are not known.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity	Stable under normal conditions.
10.2 Chemical stability	Stable under recommended storage conditions.
10.3 Possibility of hazardous reactions	No hazardous reactions when stored and handled according to prescribed instructions. Stable under recommended storage conditions.
10.4 Conditions to avoid	Extremes of temperature and direct sunlight.
10.5 Incompatible materials	Store only in the original container.
10.6 Hazardous decomposition products	No decomposition products expected under normal conditions of use.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute oral toxicity	LD50 (Rat) > 2,000 mg/kg
Acute inhalation toxicity	LC50 (Rat) > 2.998 mg/l Exposure time: 4 h Highest attainable concentration.
Acute dermal toxicity	LD50 (Rat) > 2,000 mg/kg
Skin corrosion/irritation	No skin irritation (Rabbit)
Serious eye damage/eye irritation	No eye irritation (Rabbit)
Respiratory or skin sensitisation	Non-sensitizing. (Mouse) OECD Test Guideline 429, local lymph node assay (LLNA)

Assessment STOT Specific target organ toxicity – single exposure

Fluopyram: Based on available data, the classification criteria are not met.
Prothioconazole: Based on available data, the classification criteria are not met.
Tebuconazole: Based on available data, the classification criteria are not met.

Assessment STOT Specific target organ toxicity – repeated exposure

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

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

Assessment carcinogenicity

Fluopyram caused at high dose levels an increased incidence of tumours in rats in the following organ(s): Liver.
Fluopyram caused at high dose levels an increased incidence of tumours in mice in the following organ(s): Thyroid.
The tumours seen with Fluopyram were caused through a non-genotoxic mechanism, which is not relevant at low doses. The mechanism that triggers these tumours is not relevant to humans.
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.

Assessment toxicity to reproduction

Fluopyram 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 Fluopyram is related to parental toxicity.
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

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

Aspiration hazard

Based on available data, the classification criteria are not met.

Further information

No further toxicological information is available.

11.2 Information on other hazards

Endocrine disrupting properties

Assessment	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 (Oncorhynchus mykiss (rainbow trout)) 1.82 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient fluopyram. 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.
Toxicity to aquatic invertebrates	EC50 (Daphnia magna (Water flea)) > 17 mg/l Exposure time: 48 h The value mentioned relates to the active ingredient fluopyram. No acute toxicity was observed at its limit of water solubility. EC50 (Daphnia magna (Water flea)) 1.3 mg/l Exposure time: 48 h The value mentioned relates to the active ingredient prothioconazole. EC50 (Daphnia magna (Water flea)) 2.79 mg/l Exposure time: 48 h The value mentioned relates to the active ingredient tebuconazole.
Chronic toxicity to aquatic invertebrates	NOEC (Daphnia (water flea)): 0.01 mg/l Exposure time: 21 d The value mentioned relates to the active ingredient tebuconazole.
Toxicity to aquatic plants	EC50 (Raphidocelis subcapitata (freshwater green alga)) 8.9 mg/l Growth rate; Exposure time: 72 h The value mentioned relates to the active ingredient fluopyram. EC50 (Raphidocelis subcapitata (freshwater green alga)) 2.18 mg/l Growth rate; Exposure time: 72 h The value mentioned relates to the active ingredient prothioconazole. EC50 (Raphidocelis subcapitata (freshwater green alga)) 3.8 mg/l Growth rate; Exposure time: 72 h The value mentioned relates to the active ingredient tebuconazole. EC50 (Lemna gibba (gibbous duckweed)) 0.237 mg/l Growth rate; Exposure time: 7 d The value mentioned relates to the active ingredient tebuconazole. ErC50 (Skeletonema costatum) 0.03278 mg/l Exposure time: 72 h The value mentioned relates to the active ingredient prothioconazole. EC10 (Skeletonema costatum) 0.01427 mg/l Growth rate; Exposure time: 72 h The value mentioned relates to the active ingredient prothioconazole.

12.2 Persistence and degradability

Biodegradability
Fluopyram:
Not rapidly biodegradable
Tebuconazole:
Not rapidly biodegradable
Prothioconazole:
Not rapidly biodegradable

Koc
Fluopyram: Koc: 279
Tebuconazole: Koc: 769
Prothioconazole: Koc: 1765

12.3 Bioaccumulative potential

Bioaccumulation
Fluopyram: Bioconcentration factor (BCF) 18
Does not bioaccumulate.
Tebuconazole: Bioconcentration factor (BCF) 35 - 59
Does not bioaccumulate.
Prothioconazole: Bioconcentration factor (BCF) 19
Does not bioaccumulate.

12.4 Mobility in soil

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

12.5 Results of PBT and vPvB assessment

PBT and vPvB assessment
Fluopyram: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB).
Tebuconazole: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB).
Prothioconazole: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB).

12.6 Endocrine disrupting properties

Assessment
The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

Additional ecological information
No other effects to be mentioned.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Dispose of this product only by using according to the label, or at an approved landfill or other approved facility.

Contaminated packaging Triple rinse containers. Recycle if possible. If allowed under local authority, burn if circumstances, especially wind direction permit, otherwise crush and bury in an approved local authority facility. Do not use container for any other purpose.

SECTION 14: TRANSPORT INFORMATION

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.

ADR/RID/ADN

14.1 UN number	**3082**
14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (TEBUCONAZOLE, PROTHIOCONAZOLE SOLUTION)
14.3 Transport hazard class(es)	9
14.4 Packing group	III
14.5 Environm. Hazardous Mark	YES
Hazchem Code	3Z

IMDG

14.1 UN number	**3082**
14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (TEBUCONAZOLE, PROTHIOCONAZOLE SOLUTION)
14.3 Transport hazard class(es)	9
14.4 Packing group	III
14.5 Marine pollutant	YES

IATA

14.1 UN number	**3082**
14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (TEBUCONAZOLE, PROTHIOCONAZOLE SOLUTION)
14.3 Transport hazard class(es)	9
14.4 Packing group	III
14.5 Environm. Hazardous Mark	YES

14.6 Special precautions for user
See sections 6 to 8 of this Safety Data Sheet.

14.7 Transport in bulk according to IMO instruments
No transport in bulk according to the IBC Code.

SECTION 15: REGULATORY INFORMATION

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

Further information

HSNO approval-Nr.	HSR101132
HSNO Controls	See www.epa.govt.nz
ACVM Reg.	P9246
ACVM Condition	See www.foodsafety.govt.nz

SECTION 16: OTHER INFORMATION

Abbreviations and acronyms

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute toxicity estimate
CAS-Nr.	Chemical Abstracts Service number
Conc.	Concentration
ECx	Effective concentration to x %
EINECS	European inventory of existing commercial substances
ELINCS	European list of notified chemical substances
EN	European Standard
EU	European Union
IATA	International Air Transport Association
IBC	International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code)
ICx	Inhibition concentration to x %
IMDG	International Maritime Dangerous Goods
LCx	Lethal concentration to x %
LDx	Lethal dose to x %
LOEC/LOEL	Lowest observed effect concentration/level
MARPOL	MARPOL: International Convention for the prevention of marine pollution from ships
N.O.S.	Not otherwise specified
NOEC/NOEL	No observed effect concentration/level
OECD	Organization for Economic Co-operation and Development
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
TWA	Time weighted average
UN	United Nations
WHO	World health organisation

The data given here is based on current knowledge and experience. The purpose of this Safety Data Sheet is to describe products in terms of their safety requirements. The above details do not imply any guarantee concerning composition, properties or performance of the product.

Changes since the last version are highlighted in the margin. This version replaces all previous versions.