according to Regulation (EC) No. 1907/2006



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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier Trade name	: REVUS 250 SC			
Design code	: A12946B			
1.2 Relevant identified uses of	f the substance or mixture and uses advised against			
Use of the Substance/Mixture	: Fungicide			
1.3 Details of the supplier of the safety data sheet				
Company	: Syngenta Crop Protection AG Postfach CH-4002 Basel Switzerland			
Telephone Telefax	: +41 61 323 11 11 : +41 61 323 12 12			
E-mail address	: sds.ch@syngenta.com			
1.4 Emergency telephone num	nber			
Emergency telephone number	: +44 1484 538444			

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture Classification (REGULATION (EC) No 1272/2008) Chronic aquatic toxicity, Category 2

H411: Toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms



Hazard statements	:	H411 Toxic to aquatic life with long lasting effects.
Supplemental Hazard Statements	:	EUH401To avoid risks to human health and the environment, comply with the instructions for use.EUH208Contains 1,2-benzisothiazol-3-one. May produce an allergic reaction.
Precautionary statements	:	Response: P391 Collect spillage.

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Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients 3.2 Mixtures

Hazardous components

Chemical name	CAS-No. EC-No. Registration number	Classification	Concentration (% w/w)
mandipropamid (ISO)	374726-62-2	Aquatic Acute 1; H400 Aquatic Chronic 1; H410	>= 20 - < 25
naphthalenesulfonic acid, dimethyl-, polymer with formaldehyde and methylnaphthalenesulfonic acid, sodium salt	9084-06-4	Skin Irrit. 2; H315 Eye Irrit. 2; H319	>= 1 - < 3
1,2-benzisothiazol-3(2H)-one	2634-33-5 220-120-9	Acute Tox. 4; H302 Skin Irrit. 2; H315 Eye Dam. 1; H318 Skin Sens. 1; H317 Aquatic Acute 1; H400	>= 0.0025 - < 0.025

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice	:	Have the product container, label or Safety Data Sheet with you when calling the emergency number, a poison control center or physician, or going for treatment.
If inhaled	:	Move the victim to fresh air. If breathing is irregular or stopped, administer artificial respiration. Keep patient warm and at rest. Call a physician or poison control centre immediately.
In case of skin contact	:	Take off all contaminated clothing immediately. Wash off immediately with plenty of water. If skin irritation persists, call a physician. Wash contaminated clothing before re-use.
In case of eye contact	:	Rinse immediately with plenty of water, also under the eyelids for at least 15 minutes.

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		Remove contac Immediate med	ct lenses. lical attention is required.		
If swallowed		container or lat	 If swallowed, seek medical advice immediately and show this container or label. Do NOT induce vomiting. 		
4.2 Most i	mportant symptoms	and effects, both ac	ute and delayed		
Symp	toms	: No information	available.		
4.3 Indicat	tion of any immediate	e medical attention a	and special treatment needed		
Treatr	nent	: There is no spe Treat symptom	ecific antidote available. atically.		

SECTION 5: Firefighting measures

5.1 Extinguishing media		
Suitable extinguishing media	:	Extinguishing media - small fires Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Extinguishing media - large fires Alcohol-resistant foam or Water spray
Unsuitable extinguishing media	:	Do not use a solid water stream as it may scatter and spread fire.
5.2 Special hazards arising from	the	e substance or mixture
Specific hazards during firefighting	:	As the product contains combustible organic components, fire will produce dense black smoke containing hazardous products of combustion (see section 10). Exposure to decomposition products may be a hazard to health.
5.3 Advice for firefighters		
Special protective equipment for firefighters	:	Wear full protective clothing and self-contained breathing apparatus.
Further information	:	Do not allow run-off from fire fighting to enter drains or water courses. Cool closed containers exposed to fire with water spray.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions	: Refer to protective measures listed in sections 7 and 8.
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6.2 Environmental precautions

Environmental precautions	:	Prevent further leakage or spillage if safe to do so. Do not flush into surface water or sanitary sewer system. If the product contaminates rivers and lakes or drains inform respective authorities.
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6.3 Methods and material for containment and cleaning up

Methods for cleaning up	:	Contain spillage, and then collect with non-combustible
		absorbent material, (e.g. sand, earth, diatomaceous earth,
		vermiculite) and place in container for disposal according to
		local / national regulations (see section 13).

6.4 Reference to other sections

For disposal considerations see section 13., Refer to protective measures listed in sections 7 and 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

:	No special protective measures against fire required.
	Avoid contact with skin and eyes.
	When using do not eat, drink or smoke.
	For personal protection see section 8.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	:	No special storage conditions required. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Keep away from food, drink and animal feedingstuffs.

7.3 Specific end use(s)

Specific use(s)

: For proper and safe use of this product, please refer to the approval conditions laid down on the product label.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
mandipropamid (ISO)	374726-62- 2	TWA	5 mg/m3	Syngenta

8.2 Exposure controls

Engineering measures

Containment and/or segregation is the most reliable technical protection measure if exposure cannot be eliminated.

The extent of these protection measures depends on the actual risks in use.

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Maintain air concentrations below occupational exposure standards. Where necessary, seek additional occupational hygiene advice.

Personal protective equipment	
Eye protection :	No special protective equipment required.
nd protection narks	
:	No special protective equipment required.
Skin and body protection :	No special protective equipment required. Select skin and body protection based on the physical job requirements.
Respiratory protection :	No personal respiratory protective equipment normally required. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
Protective measures :	The use of technical measures should always have priority over the use of personal protective equipment. When selecting personal protective equipment, seek appropriate professional advice.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties Appearance

Арр	bearance		suspension
		·	suspension
	Colour Odour	:	off-white to brownish characteristic
	Cubul	·	
	рН	:	5 - 9 Concentration: 1 % w/v
	Flash point	:	> 101 °C(1003.0 hPa) Method: Pensky-Martens closed cup
	Density	:	1.072 g/cm3
	Auto-ignition temperature	:	> 480 °C
Vie	Viscosity cosity, dynamic		
130	sosity, dynamic	:	45.0 - 338 mPa.s (40 °C)
			56.2 - 424 mPa.s (20 °C)
	Explosive properties	:	Not explosive

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Oxidizii	ng properties	:	The substance of	or mixture is not classified as oxidizing.
9.2 Other in				
Surface tens	sion	:	36.4 mN/m, 20 °	с
SECTION	10: Stability and re	eactiv	vity	
10.1 Reacti See se	vity ction 10.3 "Possibility	of ha	zardous reactions	
	cal stability under normal conditic	ons.		
10.3 Possib	oility of hazardous re	actio	ons	
Hazardous I	reactions		No dangerous re	eaction known under conditions of normal use.
		·	No dangerous re	
10.4 Condit Conditions t	t ions to avoid o avoid	:	No decompositio	on if used as directed.
10.5 Incom Materials to	patible materials avoid			
		:	None known.	
	lous decomposition or thermal decompos	-		nd irritant vapours.
	11: Toxicological i			·
Acute toxic	ation on toxicologic ity	al eff	ects	
Product: Acute oral to	oxicity			
	-	:	LD50 (Rat, femal	e): > 5,000 mg/kg
Acute in	nhalation toxicity	:	Exposure time: 4 Test atmosphere	: dust/mist substance or mixture has no acute
Acute o	dermal toxicity	:	LD50 (Rat, male	and female): > 5,000 mg/kg
	onents: amid (ISO):			

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		: LD50 (Rat, fer	nale): > 5,000 mg/kg
Acute inhalation toxicity		Exposure time Test atmosphe	ere: dust/mist The substance or mixture has no acute
Acute	dermal toxicity	: LD50 (Rat, ma	ale and female): > 5,050 mg/kg
	thalenesulfonic acid, yInaphthalenesulfoni		with formaldehyde and
Acute oral			at): > 5,000 mg/kg
1,2-b Acute oral	e nzisothiazol-3(2H)-o toxicity		The component/mixture is moderately toxic after on.
Product: Speci	corrosion/irritation es: Rabbit t: No skin irritation		
mandipro Species: F	oonents: pamid (ISO): Rabbit skin irritation		
meth Species: F	ylnaphthalenesulfoni	dimethyl-, polymer c acid, sodium salt	with formaldehyde and
1,2-b	enzisothiazol-3(2H)-o tating to skin.	ne:	
Product: Speci	us eye damage/eye ir es: Rabbit t: No eye irritation	ritation	
mandipro Species: F	oonents: pamid (ISO): abbit eye irritation		

naphthalenesulfonic acid, dimethyl-, polymer with formaldehyde and methylnaphthalenesulfonic acid, sodium salt:

Species: Rabbit

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Result: Irritation to eyes, reversing within 21 days

1,2-benzisothiazol-3(2H)-one:

Result: Risk of serious damage to eyes.

Respiratory or skin sensitisation

Product:

Test Type: Buehler Test Species: Guinea pig Result: Did not cause sensitisation on laboratory animals.

Components:

mandipropamid (ISO): Species: Guinea pig Result: Did not cause sensitisation on laboratory animals.

1,2-benzisothiazol-3(2H)-one:

Result: Probability or evidence of skin sensitisation in humans

Germ cell mutagenicity

Components:

mandipropamid (ISO): Germ cell mutagenicity- Assessment

Animal testing did not show any mutagenic effects.

Carcinogenicity

Components:

mandipropamid (ISO): Carcinogenicity - Assessment

: No evidence of carcinogenicity in animal studies.

Reproductive toxicity

Components:

mandipropamid (ISO): Reproductive toxicity - Assessment

No toxicity to reproduction

Repeated dose toxicity

Components:

mandipropamid (ISO):

Remarks: No adverse effect has been observed in chronic toxicity tests.

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SECTION 12: Ecological information

12. ⁴	1 Toxicity		
	duct:		
	Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l Exposure time: 96 h
			LC50 (Cyprinus carpio (Carp)): > 100 mg/l Exposure time: 96 h
	Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 100 mg/l Exposure time: 48 h
	Toxicity to algae	:	ErC50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l Exposure time: 72 h
			EbC50 (Pseudokirchneriella subcapitata (green algae)): 15.3 mg/l Exposure time: 72 h
	Ecotoxicology Assessment Chronic aquatic toxicity	:	Toxic to aquatic life with long lasting effects.
	Components: ndipropamid (ISO): icity to fish		
		:	LC50 (Oncorhynchus mykiss (rainbow trout)): 4.4 mg/l Exposure time: 96 h
	Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 7.1 mg/l Exposure time: 48 h
			EC50 (Crassostrea virginica (eastern oyster)): 0.97 mg/l Exposure time: 96 h
	Toxicity to algae	:	ErC50 (Pseudokirchneriella subcapitata (green algae)): > 2.5 mg/l Exposure time: 72 h
			NOEC (Pseudokirchneriella subcapitata (green algae)): 1.3 mg/l End point: Growth rate Exposure time: 72 h
	M-Factor (Acute aquatic toxicity)	:	1
	Toxicity to microorganisms	:	EC50 (activated sludge): > 100 mg/l Exposure time: 3 h
	Toxicity to fish (Chronic	:	NOEC: 0.5 mg/l

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t	toxicity)			Exposure time: 32 Species: Pimepha	2 d ales promelas (fathead minnow)
i	aquatic	to daphnia and other invertebrates c toxicity)	:	Exposure time: 21	
	M-Facto toxicity)	or (Chronic aquatic	:	1	
		icology Assessment quatic toxicity	:	Very toxic to aqua	itic life.
		zisothiazol-3(2H)-one	e:		
		ogy Assessment quatic toxicity	:	Very toxic to aqua	atic life.
<u>Com</u> mane	<u>ponent</u> dipropa	amid (ISO):	ity		
Biode	egradat	bility	:	Result: Not readily	y biodegradable.
:	Stability	in water	:	Degradation half I Remarks: Produc	
12.3	Bioacc	umulative potential			
mane	ponent dipropa ccumula	amid (ISO):			
			:	Remarks: Low bio	paccumulation potential.
	Partition octanol	n coefficient: n- /water	:	log Pow: 3.2 (25 °	'C)
	Mobilit ponent	y in soil <u>:s:</u>			
		amid (ISO): among environmental (con :	partments Remarks: Low mo	obility in soil.
:	Stability	/ in soil	:	Percentage dissip Remarks: Produc	ation: 50 % (DT50: 26 - 178 d) t is not persistent.
12.5 Prod		s of PBT and vPvB as	se	ssment	
	ssment		:	to be either persis	ixture contains no components considered stent, bioaccumulative and toxic (PBT), or d very bioaccumulative (vPvB) at levels of

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		0.1% or highe	ır
	oonents: pamid (ISO): nt		e is not considered to be persistent, ing and toxic (PBT) This substance is not
			be very persistent and very bioaccumulating
Product:	r adverse effects ecological information		
			of the product is based on the summation of the s of classified components.
mandipro	<u>ponents:</u> pamid (ISO): ecological information	: No data availa	able
naph	thalenesulfonic acid.		r with formaldehyde and
meth	yInaphthalenesulfonio ecological information		
Additional		: No data availa	able
	enzisothiazol-3(2H)-or ecological information		
		: No data availa	able
SECTION	I 13: Disposal consi	iderations	
	e treatment methods		
Produ	ıct	chemical or us Do not dispos Where possib incineration.	ninate ponds, waterways or ditches with sed container. e of waste into sewer. le recycling is preferred to disposal or not practicable, dispose of in compliance with
Conta	aminated packaging	: Empty remain Triple rinse co Empty contair handling site f	ing contents.

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SECTION 14	I: Transport infor	mation	
14.1 UN num	ber		
ADN		: UN 308	2
ADR		: UN 308	2
RID		: UN 308	2
IMDG		: UN 308	2
ΙΑΤΑ		: UN 308	2
14.2 UN prop	er shipping name		
ADN		N.O.S.	DNMENTALLY HAZARDOUS SUBSTANCE, LIQUID
ADR		N.O.S.	DNMENTALLY HAZARDOUS SUBSTANCE, LIQUID
RID		N.O.S.	ONMENTALLY HAZARDOUS SUBSTANCE, LIQUID
IMDG		N.O.S.	DNMENTALLY HAZARDOUS SUBSTANCE, LIQUID
ΙΑΤΑ			mentally hazardous substance, liquid, n.o.s. PROPAMID)
14.3 Transpo	rt hazard class(es)		
ADN		: 9	
ADR		: 9	
RID		: 9	
IMDG		: 9	
ΙΑΤΑ		: 9	
14.4 Packing	group		
ADN			
Packing		:	
	ation Code dentification Number	: M6 : 90	
Labels		: 9	
ADR			
Packing	group ation Code	: III : M6	
	dentification Number		
Labels		: 9	
	estriction code	: (E)	
RID			

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Class	ng group ification Code rd Identification Number s	:	III M6 90 9	
Label	ng group	:	III 9 F-A, S-F	
Packi aircra Packi Packi	IATA (Cargo) Packing instruction (cargo aircraft) Packing instruction (LQ) Packing group Labels		964 Y964 III Miscellaneous	
Packi (pass Packi	(Passenger) ng instruction enger aircraft) ng instruction (LQ) ng group s	:	964 Y964 III Miscellaneous	
14.5 Envir	ronmental hazards			
ADN Enviro ADR	onmentally hazardous	:	yes	
	onmentally hazardous	:	yes	
RID Enviro	onmentally hazardous	:	yes	
IMDG Marin	e pollutant	:	yes	
	(Passenger) e pollutant	:	yes	
	(Cargo) e pollutant	:	yes	
14.6 Spec	ial precautions for use	r		
	able sport in bulk according able for product as supp			ol and the IBC Code
	1 15: Regulatory info			

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

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).		Not applicable Not applicable	
Regulation (EC) No 1005/2009 on substances that	:	Not applicable	

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REVUS 250 SC Version Revision Date: SDS Number: This version replaces all previous 6.0 20.03.2017 S1292396177 versions. deplete the ozone layer Regulation (EC) No 850/2004 on persistent organic : Not applicable pollutants Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances. Quantity 1 Quantity 2 E2 ENVIRONMENTAL 200 t 500 t HAZARDS Other regulations Take note of Directive 98/24/EC on the protection of the : health and safety of workers from the risks related to chemical

15.2 Chemical safety assessment

A Chemical Safety Assessment is not required for this substance when it is used in the specified applications.

agents at work.

SECTION 16: Other information Full text of H-Statements

in text of fi-otatements		
H302	: Harmful if swallowed.	
H315	: Causes skin irritation.	
H317	: May cause an allergic skin reaction.	
H318	: Causes serious eye damage.	
H319	: Causes serious eye irritation.	
H400	: Very toxic to aquatic life.	
H410	: Very toxic to aquatic life with long lasting effects.	

Full text of other abbreviations

Acute Tox.	:	Acute toxicity
Aquatic Acute	:	Acute aquatic toxicity
Aquatic Chronic		Chronic aquatic toxicity
Eye Dam.	:	Serious eye damage
Eye Irrit.	:	Eye irritation
Skin Irrit.	:	Skin irritation
Skin Sens.	:	Skin sensitisation

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; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO -International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO -International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50

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- Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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