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

1.1 Product identifier

Trade name	MODESTO PLUS FS510 4X5L BOT UA
Product code (UVP)	79548184

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

Use	Fungicide, Insecticide, Seed treatment

1.3 Details of the supplier of the safety data sheet

Supplier	Bayer AG Kaiser-Wilhelm-Allee 1 51373 Leverkusen Germany
Telefax	+49(0)2173-38-7394
Responsible Department	Substance Classification & Registration +49(0)2173-38-3409 (during business hours only) Email: BCS-SDS@bayer.com

1.4 Emergency telephone no.

Emergency telephone no.	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

Classification in accordance with Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures, as amended.

Acute aquatic toxicity: Category 1
H400 Very toxic to aquatic life.

Chronic aquatic toxicity: Category 1
H410 Very toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling in accordance with Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures, as amended.

Hazard label for supply/use required.

Hazardous components which must be listed on the label:

- Clothianidin
- Fluopicolide
- Fluoxastrobin

Signal word: Warning

Hazard statements

H410	Very toxic to aquatic life with long lasting effects.
EUH208	Contains 1,2-benzisothiazolin-3-one, 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one. May produce an allergic reaction.
EUH401	To avoid risks to human health and the environment, comply with the instructions for use.

Precautionary statements

P501	Dispose of contents/container in accordance with local regulation.

2.3 Other hazards

No other hazards known.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Chemical nature

Flowable concentrate for seed treatment (FS)
Clothianidin/fluopicolide/fluoxastrobin 300:120:90 g/l

Hazardous components

Hazard statements according to Regulation (EC) No. 1272/2008

Name	CAS-No. / EC-No. / REACH Reg. No.	Classification Regulation (EC) No 1272/2008	Conc. [%]
Clothianidin	210880-92-5	Acute Tox. 4, H302 Aquatic Acute 1, H400 Aquatic Chronic 1, H410	24,39
Fluopicolide	239110-15-7	Aquatic Acute 1, H400 Aquatic Chronic 1, H410	9,76
Fluoxastrobin	361377-29-9	Aquatic Acute 1, H400 Aquatic Chronic 1, H410	7,32
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	>= 0,005 – < 0,05
reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H -isothiazol-3-one [EC no. 220-239-6] (3:	55965-84-9	Skin Corr. 1B, H314 Aquatic Chronic 1, H410 Aquatic Acute 1, H400 Skin Sens. 1, H317 Acute Tox. 3, H301 Acute Tox. 2, H330 Acute Tox. 3, H311	>= 0,0002 – < 0,0015
Glycerine	56-81-5 200-289-5	Not classified	>= 1,0

Further information

Clothianidin	210880-92-5	M-Factor: 10 (acute), 10 (chronic)
Fluoxastrobin	361377-29-9	M-Factor: 1 (acute), 1 (chronic)

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

General advice Move out of dangerous area. 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.

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

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. In case of ingestion gastric lavage should be considered in cases of significant ingestions only within the first 2 hours. However, the application of activated charcoal and sodium sulphate is always advisable. There is no specific antidote.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable High volume water jet

5.2 Special hazards arising from the substance or mixture Dangerous gases are evolved in the event of a fire.

5.3 Advice for firefighters

Special protective equipment for firefighters In the event of fire and/or explosion do not breathe fumes. In the event of fire, wear self-contained breathing apparatus.

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. Keep in suitable, closed containers for disposal.

Additional advice Check also for any local site procedures.

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 immediately after work, if necessary take a shower. Remove soiled clothing immediately and clean thoroughly before using again.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers Store in original container. Store in a place accessible by authorized persons only. 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)

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
Clothianidin	210880-92-5	2,8 mg/m3 (TWA)		OES BCS*
Fluopicolide	239110-15-7	2,2 mg/m3		OES BCS*

		(TWA)		
Fluoxastrobin	361377-29-9	0,42 mg/m3 (TWA)		OES BCS*

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

8.2 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
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.
If there is a risk of significant exposure, consider a higher protective type 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	light beige to light brown
Odour	weak, characteristic
pH	5,0 - 8,0 at 100 % (23 °C)

Flash point	> 78 °C
Ignition temperature	430 °C
Density	ca. 1,23 g/cm³ at 20 °C
Partition coefficient: n-octanol/water	Clothianidin: log Pow: 0,9 Fluopicolide: log Pow: 2,9 at pH 7 Fluoxastrobin: log Pow: 2,86 at 20 °C
Viscosity, kinematic	171 mm2/s at 40 °C Shear rate of 20/sec 59 mm2/s at 40 °C Shear rate of 100/sec
Surface tension	40 mN/m at 25 °C Determined in the undiluted form. 53 mN/m at 20 °C Determined as a 0,1% solution in distilled water (1 g/l).
Impact sensitivity	Not impact sensitive.
Oxidizing properties	No oxidizing properties
Explosivity	Not explosive
9.2 Other information	Further safety related physical-chemical data are not known.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

Thermal decomposition	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.
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) >= 5.000 mg/kg
Acute inhalation toxicity	LC50 (Rat) > 2,40 mg/l Exposure time: 4 h Highest attainable concentration.
Acute dermal toxicity	LD50 (Rat) > 2.000 mg/kg

Skin irritation	No skin irritation (Rabbit)
Eye irritation	No eye irritation (Rabbit)
Sensitisation	Non-sensitizing. (Mouse) OECD Test Guideline 429, local lymph node assay (LLNA)

Assessment repeated dose toxicity

Clothianidin did not cause specific target organ toxicity in experimental animal studies.
Fluopicolide did not cause specific target organ toxicity in experimental animal studies.
Fluoxastrobin did not cause specific target organ toxicity in experimental animal studies.

Assessment mutagenicity

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

Assessment carcinogenicity

Clothianidin was not carcinogenic in lifetime feeding studies in rats and mice.
Fluopicolide caused at high dose levels an increased incidence of tumours in mice in the following organ(s): Liver. The mechanism that triggers tumours in rodents and the type of tumours observed are not relevant to humans.
Fluoxastrobin was not carcinogenic in lifetime feeding studies in rats and mice.

Assessment toxicity to reproduction

Clothianidin 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 Clothianidin is related to parental toxicity.
Fluopicolide did not cause reproductive toxicity in a two-generation study in rats.
Fluoxastrobin 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 Fluoxastrobin is related to parental toxicity.

Assessment developmental toxicity

Clothianidin did not cause developmental toxicity in rats.
Clothianidin caused developmental toxicity in rabbits only at dose levels toxic to the dams. The developmental effects seen with Clothianidin are related to maternal toxicity.
Fluopicolide did not cause developmental toxicity in rats and rabbits.
Fluoxastrobin did not cause developmental toxicity in rats. Fluoxastrobin caused developmental toxicity in rabbits only at dose levels toxic to the dams. The developmental effects seen with Fluoxastrobin are related to maternal toxicity.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 (Oncorhynchus mykiss (rainbow trout)) > 104,2 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient clothianidin. LC50 (Oncorhynchus mykiss (rainbow trout)) 0,36 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient fluopicolide. LC50 (Oncorhynchus mykiss (rainbow trout)) 0,44 mg/l

Exposure time: 96 h
The value mentioned relates to the active ingredient fluoxastrobin.

Chronic toxicity to fish

Pimephales promelas (fathead minnow)
NOEC: 0,155 mg/l
Exposure time: 33 d
The value mentioned relates to the active ingredient fluopicolide.

Oncorhynchus mykiss (rainbow trout)
NOEC: 0,0286 mg/l
Exposure time: 95 d
The value mentioned relates to the active ingredient fluoxastrobin.

Toxicity to aquatic invertebrates

EC50 (Daphnia magna (Water flea)) 4,01 mg/l
Exposure time: 48 h

EC50 (Chironomus riparius (non-biting midge)) 0,164 mg/l
Exposure time: 48 h

Chronic toxicity to aquatic invertebrates

EC15 (Chironomus riparius (non-biting midge)): 0,00072 mg/l
Exposure time: 28 d
The value mentioned relates to the active ingredient clothianidin.

NOEC (Daphnia magna (Water flea)): 0,37 mg/l
Exposure time: 28 d
The value mentioned relates to the active ingredient fluopicolide.

NOEC (Daphnia magna (Water flea)): 0,18 mg/l
Exposure time: 21 d
The value mentioned relates to the active ingredient fluoxastrobin.

Toxicity to aquatic plants

EC50 (Navicula pelliculosa (Freshwater diatom)) 0,727 mg/l
Exposure time: 72 h

12.2 Persistence and degradability

Biodegradability

Clothianidin:
Not rapidly biodegradable
Fluopicolide:
Not rapidly biodegradable
Fluoxastrobin:
Not rapidly biodegradable

Koc

Clothianidin: Koc: 84 - 345
Fluopicolide: Koc: 321
Fluoxastrobin: Koc: 424 - 1582

12.3 Bioaccumulative potential

Bioaccumulation

Clothianidin:
Does not bioaccumulate.
Fluopicolide: Bioconcentration factor (BCF) 121
Does not bioaccumulate.
Fluoxastrobin: Bioconcentration factor (BCF) 52
Does not bioaccumulate.

12.4 Mobility in soil

Mobility in soil

Clothianidin: Moderately mobile in soils

Fluopicolide: Moderately mobile in soils
Fluoxastrobin: Slightly mobile in soils

12.5 Results of PBT and vPvB assessment

PBT and vPvB assessment	Clothianidin: 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). Fluopicolide: 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). Fluoxastrobin: 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 Other adverse effects

Additional ecological information	No other effects to be mentioned.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product	In accordance with current regulations and, if necessary, after consultation with the site operator and/or with the responsible authority, the product may be taken to a waste disposal site or incineration plant.
Contaminated packaging	Not completely emptied packagings should be disposed of as hazardous waste.
Waste key for the unused product	**02 01 08*** agrochemical waste containing dangerous substances

SECTION 14: TRANSPORT INFORMATION

ADR/RID/ADN

14.1 UN number	**3082**
14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CLOTHIANIDIN SOLUTION)
14.3 Transport hazard class(es)	9
14.4 Packing group	III
14.5 Environm. Hazardous Mark	YES
Hazard no.	90
Tunnel Code	E

This classification is in principle not valid for carriage by tank vessel on inland waterways. Please refer to the manufacturer for further information.

IMDG

14.1 UN number	**3082**
14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

	(CLOTHIANIDIN 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. (CLOTHIANIDIN 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 Annex II of MARPOL and the IBC Code
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

WHO-classification: U (Unlikely to present acute hazard in normal use)

15.2 Chemical Safety Assessment

A chemical safety assessment is not required.

SECTION 16: OTHER INFORMATION

Text of the hazard statements mentioned in Section 3

H301	Toxic if swallowed.
H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H330	Fatal if inhaled.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

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
EC-No.	European community number
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 information contained within this Safety Data Sheet is in accordance with the guidelines established by Regulation (EU) 1907/2006 and Regulation (EU) 2015/830 amending Regulation (EU) No 1907/2006 and any subsequent amendments. This data sheet complements the user's instructions, but does not replace them. The information it contains is based on the knowledge available about the product concerned at the time it was compiled. Users are further reminded of the possible risks of using a product for purposes other than those for which it was intended. The required information complies with current EEC legislation. Addressees are requested to observe any additional national requirements.

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