

# SAFETY DATA SHEET

according to the Globally Harmonized System



## Talstar Plus

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	28.02.2024	50002667	Date of first issue: 28.02.2024

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### 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Talstar Plus

#### Manufacturer or supplier's details

Company : FMC India Private Limited

Address : TCG Financial Centre, 2nd Floor, C-53,  
Bandra Kurla Complex,  
Bandra (E), Mumbai, Maharashtra-400098  
India

E-mail address : SDS-Info@fmc.com

Emergency telephone : 022 6704 5504/5404  
000-800-100-7141 (CHEMTREC)

Medical Emergency Number : 022 6704 5504/5404

#### Recommended use of the chemical and restrictions on use

Recommended use : Can be used as insecticide only.

Restrictions on use : Use as recommended by the label.

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### 2. HAZARDS IDENTIFICATION

#### Manufacture, Storage and Import of Hazardous Chemicals Rules 1989

##### Classification

Not classified as hazardous according to criteria laid down in Part I of Schedule-1.

##### GHS Classification

Acute toxicity (Oral) : Category 4

Acute toxicity (Dermal) : Category 5

Specific target organ toxicity - : Category 1 (Central nervous system)  
single exposure

Specific target organ toxicity - : Category 1 (Central nervous system)  
repeated exposure

Short-term (acute) aquatic : Category 1  
hazard

Long-term (chronic) aquatic : Category 1

**Talstar Plus**

Version 1.0      Revision Date: 28.02.2024      SDS Number: 50002667      Date of last issue: -  
Date of first issue: 28.02.2024

hazard

**GHS label elements**

Hazard pictograms



Signal Word

: Danger

Hazard Statements

: H302 Harmful if swallowed.  
H313 May be harmful in contact with skin.  
H370 Causes damage to organs (Central nervous system).  
H372 Causes damage to organs (Central nervous system) through prolonged or repeated exposure.  
H410 Very toxic to aquatic life with long lasting effects.

Precautionary Statements

: **Prevention:**  
P260 Do not breathe mist or vapors.  
P264 Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P273 Avoid release to the environment.  
**Response:**  
P301 + P317 + P330 IF SWALLOWED: Get medical help. Rinse mouth.  
P302 + P352 + P317 IF ON SKIN: Wash with plenty of water. Get medical help.  
P308 + P316 IF exposed or concerned: Get emergency medical help immediately.  
P391 Collect spillage.  
**Storage:**  
P405 Store locked up.  
**Disposal:**  
P501 Dispose of contents/ container to an approved waste disposal plant.

**Other hazards which do not result in classification**

None known.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Substance / Mixture : Mixture

**Components**

Chemical name	CAS-No.	Concentration (% w/w)
clothianidin (ISO)	210880-92-5	>= 5 - <= 15

# SAFETY DATA SHEET

according to the Globally Harmonized System



## Talstar Plus

Version 1.0      Revision Date: 28.02.2024      SDS Number: 50002667      Date of last issue: -  
Date of first issue: 28.02.2024

Bifenthrin	82657-04-3	$\geq 2.5 - < 10$
Poly(oxy-1,2-ethanediyl), .alpha.-tridecyl-.omega.-hydroxy-, phosphate, potassium salt	68186-36-7	$\geq 1 - < 3$
1,2-benzisothiazol-3(2H)-one	2634-33-5	$\geq 0.025 - < 0.1$

### 4. FIRST AID MEASURES

- General advice : Move out of dangerous area.  
Show this safety data sheet to the doctor in attendance.  
Do not leave the victim unattended.
- If inhaled : If unconscious, place in recovery position and seek medical advice.  
If symptoms persist, call a physician.
- In case of skin contact : Wash off with soap and water.  
Get medical attention if irritation develops and persists.
- If skin irritation persists, call a physician.  
If on skin, rinse well with water.  
If on clothes, remove clothes.
- In case of eye contact : Flush eyes with water as a precaution.  
Remove contact lenses.  
Protect unharmed eye.  
Keep eye wide open while rinsing.  
If eye irritation persists, consult a specialist.
- If swallowed : Induce vomiting immediately and call a physician.  
Keep respiratory tract clear.  
Do not give milk or alcoholic beverages.  
Never give anything by mouth to an unconscious person.  
If symptoms persist, call a physician.  
Take victim immediately to hospital.
- Most important symptoms and effects, both acute and delayed : Harmful if swallowed.  
May be harmful in contact with skin.  
Causes damage to organs.  
Causes damage to organs through prolonged or repeated exposure.
- Notes to physician : Treat symptomatically.

### 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Dry chemical, CO<sub>2</sub>, water spray or regular foam.
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during fire fighting : Do not allow run-off from fire fighting to enter drains or water courses.

# SAFETY DATA SHEET

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## Talstar Plus

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	28.02.2024	50002667	Date of first issue: 28.02.2024

- |  |   |
|--|---|
| Hazardous combustion products                  | : Thermal decomposition can lead to release of irritating gases and vapors.<br>Halogenated compounds<br>Carbon oxides<br>Nitrogen oxides (NOx)<br>Sulfur oxides   |
| Specific extinguishing methods                 | : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.<br>Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. |
| Special protective equipment for fire-fighters | : Wear self-contained breathing apparatus for firefighting if necessary.  |

### 6. ACCIDENTAL RELEASE MEASURES

- |   |   |
|---|---|
| Personal precautions, protective equipment and emergency procedures | : Use personal protective equipment.  |
| Environmental precautions   | : Prevent product from entering drains.<br>Prevent further leakage or spillage if safe to do so.<br>If the product contaminates rivers and lakes or drains inform respective authorities. |
| Methods and materials for containment and cleaning up               | : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).<br>Keep in suitable, closed containers for disposal.                             |

### 7. HANDLING AND STORAGE

- |   |   |
|---|---|
| Advice on protection against fire and explosion | : Normal measures for preventive fire protection.   |
| Advice on safe handling                         | : Do not breathe vapors/dust.<br>Avoid contact with skin and eyes.<br>For personal protection see section 8.<br>Smoking, eating and drinking should be prohibited in the application area.<br>Dispose of rinse water in accordance with local and national regulations.                               |
| Conditions for safe storage                     | : Keep container tightly closed in a dry and well-ventilated place.<br>Containers which are opened must be carefully resealed and kept upright to prevent leakage.<br>Observe label precautions.<br>Electrical installations / working materials must comply with the technological safety standards. |

# SAFETY DATA SHEET

according to the Globally Harmonized System



## Talstar Plus

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	28.02.2024	50002667	Date of first issue: 28.02.2024

Further information on storage stability : No decomposition if stored and applied as directed.

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

#### Personal protective equipment

Respiratory protection	:	In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit.
Hand protection	:	
Material	:	Wear chemical resistant gloves, such as barrier laminate, butyl rubber or nitrile rubber.
Remarks	:	The suitability for a specific workplace should be discussed with the producers of the protective gloves.
Eye protection	:	Eye wash bottle with pure water Tightly fitting safety goggles
Skin and body protection	:	Impervious clothing Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Hygiene measures	:	When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	:	liquid
Form	:	viscous liquid
Color	:	off-white to white
pH	:	4 - 8 (1% solution in water)
Melting point/freezing point	:	No data available
Boiling point/boiling range	:	No data available

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## Talstar Plus

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	28.02.2024	50002667	Date of first issue: 28.02.2024

Flash point	:	No data available
Self-ignition	:	No data available
Density	:	1.06 - 1.08 g/cm <sup>3</sup>
Solubility(ies)	:	
Water solubility	:	dispersible
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Viscosity	:	
Viscosity, dynamic	:	2,500 - 4,000 mPa.s ( 25 °C) 50 rpm
Explosive properties	:	Not explosive
Oxidizing properties	:	The product is not oxidizing.

### 10. STABILITY AND REACTIVITY

Reactivity	:	No decomposition if stored and applied as directed.
Chemical stability	:	No decomposition if stored and applied as directed.
Possibility of hazardous reactions	:	No decomposition if stored and applied as directed.
Conditions to avoid	:	Protect from frost, heat and sunlight.
Incompatible materials	:	Strong acids and strong bases Strong oxidizing agents
Hazardous decomposition products	:	Nitrogen oxides (NO <sub>x</sub> ) Sulfur oxides Carbon oxides Halogenated compounds

### 11. TOXICOLOGICAL INFORMATION

#### Acute toxicity

Harmful if swallowed.

May be harmful in contact with skin.

#### Product:

# SAFETY DATA SHEET

according to the Globally Harmonized System



## Talstar Plus

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	28.02.2024	50002667	Date of first issue: 28.02.2024

Acute oral toxicity : LD50(Rat, female): > 300 - 2,000 mg/kg  
Method: OECD Test Guideline 423

Acute inhalation toxicity : LC50(Rat): > 2.22 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403  
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50(Rat, male and female): > 2,000 mg/kg  
Method: OECD Test Guideline 402

### Components:

#### **clothianidin (ISO):**

Acute oral toxicity : LD50 (Mouse, male and female): 389 - 465 mg/kg  
Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50 (Rat): > 5.54 mg/l  
Exposure time: 4.5 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (Rat, male and female): > 2,000 mg/kg  
Assessment: The substance or mixture has no acute dermal toxicity

#### **Bifenthrin:**

Acute oral toxicity : LD50 (Rat, male and female): 56.7 mg/kg  
Symptoms: Convulsions, Tremors, ataxia

LD50 (Mouse, female): 42.5 mg/kg  
Method: OPPTS 870.1100

Acute inhalation toxicity : LC50 (Rat, female): 0.6 - 1.2 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403  
Symptoms: Tremors, Convulsions

LC50 (Rat, male): 1.10 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403  
Symptoms: Tremors, Fatality

Acute dermal toxicity : LD50 (Rat, male and female): > 2,000 mg/kg  
Remarks: no mortality

**Poly(oxy-1,2-ethanediyl), .alpha.-tridecyl-.omega.-hydroxy-, phosphate, potassium salt:**

# SAFETY DATA SHEET

according to the Globally Harmonized System



## Talstar Plus

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	28.02.2024	50002667	Date of first issue: 28.02.2024

---

Acute oral toxicity : Assessment: Toxic effects cannot be excluded

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

Acute oral toxicity : LD50 (Rat, male and female): 490 mg/kg  
Method: OECD Test Guideline 401

Acute dermal toxicity : LD50 (Rat, male and female): > 2,000 mg/kg  
Method: OECD Test Guideline 402  
Assessment: The substance or mixture has no acute dermal toxicity

### **Skin corrosion/irritation**

Not classified based on available information.

#### **Product:**

Species : Rabbit  
Method : OECD Test Guideline 404  
Result : No skin irritation

#### **Components:**

##### **clothianidin (ISO):**

Species : Rabbit  
Method : OECD Test Guideline 404  
Result : No skin irritation

##### **Bifenthrin:**

Species : Rabbit  
Method : OECD Test Guideline 404  
Result : slight or no skin irritation.  
GLP : yes

##### **Poly(oxy-1,2-ethanediyl), .alpha.-tridecyl-.omega.-hydroxy-, phosphate, potassium salt:**

Result : Skin irritation

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

Species : Rabbit  
Exposure time : 72 h  
Method : OECD Test Guideline 404  
Result : No skin irritation

### **Serious eye damage/eye irritation**

Not classified based on available information.

#### **Product:**

Species : Rabbit  
Method : OECD Test Guideline 405  
Result : No eye irritation



# SAFETY DATA SHEET

according to the Globally Harmonized System



## Talstar Plus

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	28.02.2024	50002667	Date of first issue: 28.02.2024

---

### Components:

#### **clothianidin (ISO):**

Species	:	Rabbit
Method	:	OECD Test Guideline 405
Result	:	No eye irritation

#### **Bifenthrin:**

Species	:	Rabbit
Method	:	OECD Test Guideline 405
Result	:	Slight or no eye irritation
GLP	:	yes

#### **Poly(oxy-1,2-ethanediyl), .alpha.-tridecyl-.omega.-hydroxy-, phosphate, potassium salt:**

Result	:	Irreversible effects on the eye
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#### **1,2-benzisothiazol-3(2H)-one:**

Species	:	Bovine cornea
Method	:	OECD Test Guideline 437
Result	:	No eye irritation

Species	:	Rabbit
Method	:	EPA OPP 81-4
Result	:	Irreversible effects on the eye

### **Respiratory or skin sensitization**

#### **Skin sensitization**

Not classified based on available information.

#### **Respiratory sensitization**

Not classified based on available information.

### Product:

Test Type	:	Buehler Test
Routes of exposure	:	Skin contact
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Not a skin sensitizer.

### Components:

#### **clothianidin (ISO):**

Test Type	:	Maximization Test
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Not a skin sensitizer.

# SAFETY DATA SHEET

according to the Globally Harmonized System



## Talstar Plus

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	28.02.2024	50002667	Date of first issue: 28.02.2024

---

### **Bifenthrin:**

Test Type	: Maximization Test
Routes of exposure	: Skin contact
Species	: Guinea pig
Method	: OECD Test Guideline 406
Result	: May cause sensitization by skin contact.
GLP	: yes

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

Test Type	: Maximization Test
Species	: Guinea pig
Method	: OECD Test Guideline 406
Result	: May cause sensitization by skin contact.

Species	: Guinea pig
Method	: FIFRA 81.06
Result	: May cause sensitization by skin contact.

### **Germ cell mutagenicity**

Not classified based on available information.

### **Components:**

#### **clothianidin (ISO):**

Genotoxicity in vitro	: Test Type: reverse mutation assay Test system: Salmonella typhimurium Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative
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	: Test Type: Chromosome aberration test in vitro Test system: Chinese hamster fibroblasts Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 473 Result: negative
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Genotoxicity in vivo	: Test Type: Micronucleus test Species: Rat Application Route: Oral Method: OECD Test Guideline 474 Result: negative
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	: Test Type: comet assay Species: Rat Application Route: Oral Method: OECD Test Guideline 489 Result: negative
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### **Bifenthrin:**

Genotoxicity in vitro	: Test Type: gene mutation test Test system: Chinese hamster ovary cells
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# SAFETY DATA SHEET

according to the Globally Harmonized System



## Talstar Plus

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	28.02.2024	50002667	Date of first issue: 28.02.2024

---

Metabolic activation: with and without metabolic activation  
Result: negative

Test Type: reverse mutation assay  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 471  
Result: negative

Test Type: Mouse lymphoma assay  
Metabolic activation: with and without metabolic activation  
Result: negative

Genotoxicity in vivo : Test Type: Sex-linked Recessive Lethal Test  
Species: *Drosophila melanogaster* (vinegar fly)  
Result: negative

Test Type: unscheduled DNA synthesis assay  
Species: Rat  
Method: OECD Test Guideline 486  
Result: negative

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

Genotoxicity in vitro : Test Type: gene mutation test  
Test system: mouse lymphoma cells  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 476  
Result: negative

Test Type: Ames test  
Method: OECD Test Guideline 471  
Result: negative

Test Type: Chromosome aberration test in vitro  
Method: OECD Test Guideline 473  
Result: positive

Genotoxicity in vivo : Test Type: unscheduled DNA synthesis assay  
Species: Rat (male)  
Cell type: Liver cells  
Application Route: Ingestion  
Exposure time: 4 h  
Method: OECD Test Guideline 486  
Result: negative

Test Type: Micronucleus test  
Species: Mouse  
Application Route: Oral  
Method: OECD Test Guideline 474  
Result: negative

Germ cell mutagenicity - Assessment : Weight of evidence does not support classification as a germ cell mutagen.

# SAFETY DATA SHEET

according to the Globally Harmonized System



## Talstar Plus

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	28.02.2024	50002667	Date of first issue: 28.02.2024

---

### Carcinogenicity

Not classified based on available information.

### Components:

#### **clothianidin (ISO):**

Species	: Rat, male and female
Application Route	: Oral
NOAEL	: 3,000 ppm
Method	: OECD Test Guideline 453
Result	: negative

#### **Bifenthrin:**

Species	: Rat, female
Application Route	: Oral
Exposure time	: 2 Years
NOAEL	: 3 mg/kg bw/day
Result	: negative

Species	: Mouse, male
Application Route	: Oral
Exposure time	: 18 month(s)
NOAEL	: 7.6 mg/kg bw/day
Result	: positive
Symptoms	: malignant tumors

### Reproductive toxicity

Not classified based on available information.

### Components:

#### **clothianidin (ISO):**

Effects on fertility	: Test Type: Two-generation study Species: Rat, male and female Application Route: Oral Method: OECD Test Guideline 416 Result: negative
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Effects on fetal development	: Test Type: Pre-natal Species: Rat Application Route: Oral Embryo-fetal toxicity.: NOAEL: $\geq$ 125 mg/kg bw/day Method: OECD Test Guideline 414 Result: negative
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#### **Bifenthrin:**

Effects on fertility	: Test Type: Two-generation study Species: Rat Application Route: Oral General Toxicity Parent: NOAEL: 3 mg/kg bw/day
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# SAFETY DATA SHEET

according to the Globally Harmonized System



## Talstar Plus

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	28.02.2024	50002667	Date of first issue: 28.02.2024

---

General Toxicity F1: NOAEL: 5 mg/kg bw/day  
Result: negative

Effects on fetal development : Test Type: Embryo-fetal development  
Species: Rabbit  
Application Route: Oral  
General Toxicity Maternal: NOAEL: 2.7 mg/kg bw/day  
Teratogenicity: NOAEL: 2.7 mg/kg bw/day  
Symptoms: Maternal effects.  
Result: No teratogenic effects.

Test Type: Embryo-fetal development  
Species: Rat  
Application Route: Oral  
General Toxicity Maternal: NOAEL: 1 mg/kg bw/day  
Teratogenicity: NOAEL: 2 mg/kg bw/day  
Result: No teratogenic effects.

Species: Rat  
Application Route: Oral  
General Toxicity Maternal: LOAEL: 7.2 mg/kg bw/day  
Developmental Toxicity: LOAEL: 7.2 mg/kg bw/day  
Embryo-fetal toxicity.: NOEL: 9.0 mg/kg bw/day  
Method: OECD Test Guideline 426  
Result: Animal testing did not show any effects on fertility.,  
Some evidence of adverse effects on development, based on  
animal experiments.

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

Effects on fertility : Species: Rat, male  
Application Route: Ingestion  
General Toxicity Parent: NOAEL: 18.5 mg/kg body weight  
General Toxicity F1: NOAEL: 48 mg/kg body weight  
Fertility: NOAEL: 112 mg/kg bw/day  
Symptoms: No effects on reproduction parameters.  
Method: OPPTS 870.3800  
Result: negative

Reproductive toxicity - Assessment : Weight of evidence does not support classification for reproductive toxicity

### **STOT-single exposure**

Causes damage to organs (Central nervous system).

### **Components:**

#### **Bifenthrin:**

Target Organs : Central nervous system  
Assessment : Causes damage to organs.

# SAFETY DATA SHEET

according to the Globally Harmonized System



## Talstar Plus

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	28.02.2024	50002667	Date of first issue: 28.02.2024

---

### STOT-repeated exposure

Causes damage to organs (Central nervous system) through prolonged or repeated exposure.

#### Components:

##### **Bifenthrin:**

Target Organs	: Central nervous system
Assessment	: The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 1.

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

Assessment	: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.
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### Repeated dose toxicity

#### Components:

##### **clothianidin (ISO):**

Species	: Rat
NOAEL	: 500 ppm
LOAEL	: 3000 ppm
Application Route	: Oral
Exposure time	: 90 days
Method	: OECD Test Guideline 408
Remarks	: Effects are of limited toxicological significance.

##### **Bifenthrin:**

Species	: Rat, male and female
NOEL	: 100 ppm
Application Route	: Oral - feed
Exposure time	: 90 d
Remarks	: No toxicologically significant effects were found.

Species	: Dog, male and female
NOEL	: 2.5 mg/kg bw/day
Application Route	: Oral - feed
Exposure time	: 13 w
Symptoms	: Tremors

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

Species	: Rat, male and female
NOAEL	: 15 mg/kg
Application Route	: Ingestion
Exposure time	: 28 d
Method	: OECD Test Guideline 407
Symptoms	: Irritation

Species	: Rat, male and female
NOAEL	: 69 mg/kg
Application Route	: Ingestion

# SAFETY DATA SHEET

according to the Globally Harmonized System



## Talstar Plus

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	28.02.2024	50002667	Date of first issue: 28.02.2024

Exposure time : 90 d  
Symptoms : Irritation, Reduced body weight

### Aspiration toxicity

Not classified based on available information.

### Components:

#### Bifenthrin:

The substance does not have properties associated with aspiration hazard potential.

### Further information

#### Product:

Remarks : No data available

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

#### Product:

Toxicity to fish : NOEC (Cyprinus carpio (Carp)): 0.00033 mg/l  
Exposure time: 96 h  
Test Type: Static renewal test  
Method: OECD Test Guideline 203

LC50 (Cyprinus carpio (Carp)): 0.0043 mg/l  
Exposure time: 96 h  
Test Type: Static renewal test  
Method: OECD Test Guideline 203

Toxicity to soil dwelling organisms : NOEC: 1.5 mg/kg  
Species: Eisenia fetida (earthworms)  
Method: OECD Test Guideline 207

LC50: 36.88 mg/kg  
Species: Eisenia fetida (earthworms)  
Method: OECD Test Guideline 207

Toxicity to terrestrial organisms : LD50: > 2,000 mg/kg  
End point: Acute oral toxicity  
Species: Columba livia (feral pigeon)  
Method: OECD Test Guideline 223

LD50: 0.27 µg/bee  
End point: Acute contact toxicity  
Species: Honey Bee  
Method: OECD Test Guideline 214

LD50: 0.02 - 0.03 µg/bee  
End point: Acute oral toxicity

# SAFETY DATA SHEET

according to the Globally Harmonized System



## Talstar Plus

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	28.02.2024	50002667	Date of first issue: 28.02.2024

Species: Honey Bee  
Method: OECD Test Guideline 213

### Components:

#### **clothianidin (ISO):**

- Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): > 117 mg/l  
Exposure time: 96 h  
Test Type: static test  
Method: OECD Test Guideline 203
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Chironomus riparius (harlequin fly)): 0.029 mg/l  
Exposure time: 48 h  
Test Type: static test
- Toxicity to algae/aquatic plants : NOEC ( Navicula pelliculosa (Freshwater diatom)): 40 mg/l  
Exposure time: 96 h  
Test Type: static test  
Method: OECD Test Guideline 201
- EC50 ( Navicula pelliculosa (Freshwater diatom)): > 100 mg/l  
Exposure time: 96 h  
Test Type: static test  
Method: OECD Test Guideline 201
- M-Factor (Acute aquatic toxicity) : 10
- Toxicity to microorganisms : EC50 (activated sludge): > 1,000 mg/l  
Exposure time: 3 h  
Method: OECD Test Guideline 209
- Toxicity to fish (Chronic toxicity) : NOEC: 20 mg/l  
Exposure time: 33 d  
Species: Pimephales promelas (fathead minnow)  
Method: US EPA Test Guideline OPPTS 850.1400
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0.12 mg/l  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)  
Test Type: semi-static test  
Method: OECD Test Guideline 211
- NOEC: 0.0097 mg/l  
Exposure time: 39 d  
Species: Americamysis bahia (mysid shrimp)  
Test Type: flow-through test  
Method: OPPTS 850.1350
- M-Factor (Chronic aquatic toxicity) : 10



# SAFETY DATA SHEET

according to the Globally Harmonized System



## Talstar Plus

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	28.02.2024	50002667	Date of first issue: 28.02.2024

### Bifenthrin:

Toxicity to fish	:	LC50 ( <i>Salmo gairdneri</i> ): 0.00015 mg/l Exposure time: 96 h Test Type: flow-through test  LC50 ( <i>Lepomis macrochirus</i> (Bluegill sunfish)): 0.00035 mg/l Exposure time: 96 h Test Type: flow-through test  LC50 ( <i>Oncorhynchus mykiss</i> (rainbow trout)): 0.000256 mg/l Exposure time: 96 h Test Type: semi-static test Method: OECD Test Guideline 203 GLP: yes  LC50 ( <i>Pimephales promelas</i> (fathead minnow)): 0.000234 mg/l Exposure time: 96 h Test Type: semi-static test Method: OECD Test Guideline 203 GLP: yes
Toxicity to daphnia and other aquatic invertebrates	:	EC50 ( <i>Daphnia</i> ): 0.00011 mg/l Exposure time: 48 h  LC50 ( <i>Daphnia</i> ): 0.0016 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	EC50 (algae): 0.822 mg/l Exposure time: 72 h
M-Factor (Acute aquatic toxicity)	:	1,000
Toxicity to fish (Chronic toxicity)	:	NOEC: 0.00012 mg/l Exposure time: 21 d Species: <i>Oncorhynchus mykiss</i> (rainbow trout)
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 0.0013 µg/l Exposure time: 21 d Species: <i>Daphnia magna</i> (Water flea)  NOEC: 0.00095 µg/l Exposure time: 21 d Species: <i>Daphnia magna</i> (Water flea)
M-Factor (Chronic aquatic toxicity)	:	100,000
Toxicity to soil dwelling organisms	:	LD50: > 16 mg/kg Exposure time: 14 d Species: <i>Eisenia fetida</i> (earthworms)

# SAFETY DATA SHEET

according to the Globally Harmonized System



## Talstar Plus

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	28.02.2024	50002667	Date of first issue: 28.02.2024

Toxicity to terrestrial organisms : LD50: 1,800 mg/kg  
Species: *Colinus virginianus* (Bobwhite quail)

LD50: > 2,150 mg/kg  
Species: *Anas platyrhynchos* (Mallard duck)

LD50: 0.1 - 0.35 µg/bee  
Exposure time: 24 h  
End point: Acute oral toxicity  
Species: *Apis mellifera* (bees)  
Method: OECD Test Guideline 213

LD50: 0.1 - 0.3 µg/bee  
Exposure time: 24 h  
End point: Acute contact toxicity  
Species: *Apis mellifera* (bees)  
Method: OECD Test Guideline 214

### **Poly(oxy-1,2-ethanediyl), .alpha.-tridecyl-.omega.-hydroxy-, phosphate, potassium salt:**

#### **Ecotoxicology Assessment**

Acute aquatic toxicity : Harmful to aquatic life.

Chronic aquatic toxicity : Harmful to aquatic life with long lasting effects.

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

Toxicity to fish : LC50 (*Cyprinodon variegatus* (sheepshead minnow)): 16.7 mg/l  
Exposure time: 96 h  
Test Type: static test

LC50 (*Oncorhynchus mykiss* (rainbow trout)): 2.15 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (*Daphnia magna* (Water flea)): 2.9 mg/l  
Exposure time: 48 h  
Test Type: static test  
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (*Pseudokirchneriella subcapitata* (green algae)): 0.070 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201

NOEC (*Pseudokirchneriella subcapitata* (green algae)): 0.04 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201

M-Factor (Acute aquatic toxicity) : 10

# SAFETY DATA SHEET

according to the Globally Harmonized System



## Talstar Plus

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	28.02.2024	50002667	Date of first issue: 28.02.2024

---

Toxicity to microorganisms : EC50 (activated sludge): 24 mg/l  
Exposure time: 3 h  
Test Type: Respiration inhibition  
Method: OECD Test Guideline 209

EC50 (activated sludge): 12.8 mg/l  
Exposure time: 3 h  
Test Type: Respiration inhibition  
Method: OECD Test Guideline 209

### Persistence and degradability

#### Components:

##### **clothianidin (ISO):**

Biodegradability : Remarks: No data available

##### **Bifenthrin:**

Biodegradability : Result: Not readily biodegradable.

##### **Poly(oxy-1,2-ethanediyl), .alpha.-tridecyl-omega-hydroxy-, phosphate, potassium salt:**

Biodegradability : Result: Readily biodegradable.  
Biodegradation: 80 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301D  
Remarks: Based on data from similar materials

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

Biodegradability : Result: rapidly biodegradable  
Method: OECD Test Guideline 301C

### Bioaccumulative potential

#### Components:

##### **clothianidin (ISO):**

Bioaccumulation : Remarks: No data available

##### **Bifenthrin:**

Bioaccumulation : Species: *Lepomis macrochirus* (Bluegill sunfish)  
Bioconcentration factor (BCF): 1,709  
Remarks: Due to the distribution coefficient n-octanol/water, accumulation in organisms is possible.  
See section 9 for octanol-water partition coefficient.

Partition coefficient: n-octanol/water : log Pow: 6.6

# SAFETY DATA SHEET

according to the Globally Harmonized System



## Talstar Plus

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	28.02.2024	50002667	Date of first issue: 28.02.2024

---

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

Bioaccumulation : Species: Lepomis macrochirus (Bluegill sunfish)  
Exposure time: 56 d  
Bioconcentration factor (BCF): 6.62  
Method: OECD Test Guideline 305  
Remarks: This substance is not considered to be persistent, bioaccumulating and toxic (PBT).

Partition coefficient: n-octanol/water : log Pow: 0.7 (20 °C)  
pH: 7  
  
log Pow: 0.99 (20 °C)  
pH: 5

### Mobility in soil

#### Components:

##### clothianidin (ISO):

Distribution among environmental compartments : Koc: 123 ml/g, log Koc: 2.08  
Remarks: Mobile in soils

##### Bifenthrin:

Distribution among environmental compartments : Koc: 236610 ml/g, log Koc: 5.37  
Remarks: immobile

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

Distribution among environmental compartments : Koc: 9.33 ml/g, log Koc: 0.97  
Method: OECD Test Guideline 121  
Remarks: Highly mobile in soils

### Other adverse effects

#### Product:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.  
Very toxic to aquatic life with long lasting effects.

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## 13. DISPOSAL CONSIDERATIONS

### Disposal methods

Waste from residues : The product should not be allowed to enter drains, water courses or the soil.  
Do not contaminate ponds, waterways or ditches with chemical or used container.  
Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.  
Dispose of as unused product.

# SAFETY DATA SHEET

according to the Globally Harmonized System



## Talstar Plus

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	28.02.2024	50002667	Date of first issue: 28.02.2024

Do not re-use empty containers.

### 14. TRANSPORT INFORMATION

#### International Regulations

##### UNRTDG

UN number	: UN 3082
Proper shipping name	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Bifenthrin, Clothianidin)
Class	: 9
Packing group	: III
Labels	: 9
Environmentally hazardous	: yes

##### IATA-DGR

UN/ID No.	: UN 3082
Proper shipping name	: Environmentally hazardous substance, liquid, n.o.s. (Bifenthrin, Clothianidin)
Class	: 9
Packing group	: III
Labels	: Miscellaneous
Packing instruction (cargo aircraft)	: 964
Packing instruction (passenger aircraft)	: 964
Environmentally hazardous	: yes

##### IMDG-Code

UN number	: UN 3082
Proper shipping name	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Bifenthrin, Clothianidin)
Class	: 9
Packing group	: III
Labels	: 9
EmS Code	: F-A, S-F
Marine pollutant	: yes

#### Transport in bulk according to IMO instruments

Not applicable for product as supplied.

#### Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

# SAFETY DATA SHEET

according to the Globally Harmonized System



## Talstar Plus

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	28.02.2024	50002667	Date of first issue: 28.02.2024

### 15. REGULATORY INFORMATION

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

**The ingredients of this product are reported in the following inventories:**

TCSI	: On the inventory, or in compliance with the inventory
TSCA	: Product contains substance(s) not listed on TSCA inventory.
AIIC	: Not in compliance with the inventory
DSL	: This product contains the following components that are not on the Canadian DSL nor NDSL.  clothianidin (ISO) Bifenthrin Smectite-group minerals
ENCS	: Not in compliance with the inventory
ISHL	: Not in compliance with the inventory
KECI	: Not in compliance with the inventory
PICCS	: Not in compliance with the inventory
IECSC	: On the inventory, or in compliance with the inventory
NZIoC	: Not in compliance with the inventory
TECI	: Not in compliance with the inventory

### 16. OTHER INFORMATION

Revision Date	: 28.02.2024
Date format	: dd.mm.yyyy

#### Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); 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; ERG - Emergency Response Guide; GHS - Globally Harmonized Sys-

# SAFETY DATA SHEET

according to the Globally Harmonized System



## Talstar Plus

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	28.02.2024	50002667	Date of first issue: 28.02.2024

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tem; 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 - 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; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; 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; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals 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; WHMIS - Workplace Hazardous Materials Information System

### Disclaimer

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