

MATERIAL SAFETY DATA SHEET

SUBSTANCE / PREPARATION NAME

TOWER

Date of preparation	13/07/2015
ReleaseDate	13/07/2015
MSDS No	FORM_MSDS_R&D_194_00
RenewalDate/No	

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This form is based on SAFETY DATA FORMS AND REGULATION ABOUT THE PREPARATION AND DISTRIBUTION OF HAZARDOUS SUBSTANCES (dated 26/12/2008 and 27092 numbered).

1. DEFINITION OF SUBSTANCE/PREPARATION AND COMPANY/ BUSINESS OWNER:

1.1 Substance/ Presentation Of The Preparation:

Product Name : **TOWER**

Content : Copper Salt (Copper Oxychlorure) 30%, Mancozeb 13.3% and Cymoxanil 4%

FormulationType : WG (Water Dispersible Granules)

Copper Salt (Copper Oxychlorure)

Cas No : 1332-65-6

EC No : 215-572-9

FRAC : M1, M multi-site: inorganic

Mancozeb

Cas No : 8018-01-7

EC No : -

FRAC : M3, M multi-site: alkylenebis(dithiocarbamate)

Cymoxanil

Cas No : 57966-95-7

EC No : 261-043-0

FRAC : 27, U cyanoacetamide oxime

1.2 Usage of Substance/Preparation:

Fungicide

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1.3 Firm Presentation of the Company:

Manufacturer and Licensee Company:

Company Name : AGRİ SCIENCES TARIM VE İLAÇ ÜR. SAN. TİC. LTD. ŞTİ.
Address : Bekir Saydam Caddesi Pancar No: 31 Torbalı / İZMİR
Telephone : +90 0232 864 13 33
Fax : +90 0232 864 16 79

1.4 Emergency Telephone:

Please call +90 0232 864 13 33 in an emergency.

2. INFORMATION ABOUT THE CONTENT/COMPOSITION:

Substance	%	CAS No	Hazard	R ¹	Classification
Copper Salts	30	1332-65-6	Xn,N	R20/22,R50/53	Xn,N;R20, R22, R50/53
Mancozeb	13,3	8018-01-7	Xn,N	R43,R63,R50 Repr. Cat. 3	Xi,Repr Cat 3 R43, R63
Cymoxanil	4	57966-95-7	Xn,N	R22-R43- R50/53	Xi,N;R43
Diğerleri ²	-	-	-	-	-

- Descriptions about R¹ are given in chapter 16
- It's out of classification in that does not contain dangerous substances.

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3. IDENTIFICATION OF HAZARDS:



Xn: Harmful



N: Dangerous for the environment

R 20/22 - Harmful by inhalation and if swallowed.

R43 - May cause sensitization by skin contact.

R50/53: May cause long-term adverse effects in aquatic environments.

R63 - Possible risk of harm to the unborn child.

4. FIRST AID PRECAUTIONS:

Eye Contact: Wash eyes with plenty of water for 15 min. consult to an eye specialist.

Skin contact: Wash off with soap and water.

If inhaled: Move patient to fresh and well-ventilated area, call a doctor.

If swallowed: If patient is not unconscious, the mouth should be rinsed, do not puke.

Antidote and required information: There is no special antidote. Symptomatic treatment is applied.

5. FIRE-FIGHTING MEASURES

Required Personal Protective Equipment in Aid: Do not breathe fumes of explosion and fire. If possible, use self contained breathing apparatus during fire. Black smoke can be occurred since product contains flammable organic

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Hazards: Formation of dangerous gases is taken into account in case of fire.

Fire extinguishers: Water mist, foam, carbon dioxide, extinguishing powder. Water jet is not be used.

6. ACCIDENTAL RELEASE PRECAUTIONS:

General Information: Use personal protection devices, specified in section 8.

Spillage and Leakage: Spilled material should be collected by sweeping and filled the disposal into suitable containers. Collected materials should be handled in accordance with Section 13.

Personal Alerts: Avoid contact with spilled product or contaminated areas. Do not eat, drink or smoke when dealing with spilled product. Avoid dust formation.

The Cleaning Process: The product is collected with dust retaining material Substance collected into hard plastic container and stored in a secure way until to destroy. Contaminated substances, cleaned according to environment and ground instructions. The product flowing to drains or sewers is blocked. If waste is mixed with water, it is reported to the authorities.

7. HANDLING AND STORAGE

Handling : Use personal protective equipments specified in section 8. Avoid contact with skin and eyes. Do not breathe it. Wash your hands after usage. Avoid high temperature because of the thermal degradation.

Storage : Store in original container in a cool, dry and well-ventilated place. Keep away from foods, drink and animal feed stuffs. Protect from direct sunlight. Protect against freezing.

Storage Temperature ≤ 35 °C.

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8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

Engineering Precautions: Keep the substance concentration below the allowable limits by providing the appropriate general or regional ventilation.

Personal Protective Equipment:

Eye : Use safety glasses according to EN 166.

Skin : Use protective clothing and suitable gloves. If possible, use 2 layers of clothing. Use CE marked Nitrile rubber gloves (min 0,40 mm thick). Wash contaminated gloves. Dispose of the not cleanable gloves.

Respiration : Use breathing apparatus according to EN 149:2001. Breathing apparatus only used in short-term work store reduce the risk, for example, in local ventilations. Warning instructions prepared by manufacturers about respiratory protection apparatus must be followed.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Granule
Color : light green- brownish green
Bulk density : $0,70 \pm 0,5 \text{ g/cm}^3$
pH : 5-8 (% 10 solution) (20⁰C)
Solubility : Dispersible

10. STABILITY AND REACTION

Conditions to avoid : Direct sunlight. Exothermically degradable and flammable at extreme temperatures.

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Hazardous reactions : No hazardous reactions when stored and handled appropriate. Toxic and irritant vapors may occur as a result of combustion or thermal decomposition. A hazardous polymerization product does not occur.

11. TOXICOLOGICAL INFORMATION

Copper oxy chloride Substance:

Oral Acute oral LD₅₀ for rats 950–1862 mg/kg.

Skin and eye Acute percutaneous LD₅₀ for rats >2000 mg/kg.

Inhalation LC₅₀ (4 h) 2.83 mg/l.

NOEL 16–17 mg Cu/kg b.w. daily.

ADI/RfD (JECFA evaluation) copper compounds 0.5 mg/kg [1982]; (WHO) 0.5 mg/kg [1998]; (EC) 0.15 mg Cu/kg b.w. [2007].

Toxicity Class WHO (a.i.) III; EPA (formulation) III

Mancozeb

Oral Acute oral LD₅₀ for male rats 760, female rats 1200 mg/kg.

Skin and eye Acute percutaneous LD₅₀ for rabbits >2000 mg/kg. Not an eye irritant; slight skin irritant (rabbits). Not a skin sensitiser (guinea pigs).

Inhalation LC₅₀ (4 h) for male and female rats >5.06 mg/l.

NOEL (2 y) for male rats 4.1, female rats 5.4, male mice 4.2, female mice 5.8, male and female dogs 3.0 mg/kg b.w. daily.

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Cymoxanil

Oral Acute oral LD₅₀ for rats >5000 mg/kg.

Skin and eye Acute percutaneous LD₅₀ for rats >10 000, rabbits >5000 mg/kg. No irritation to skin (rabbits); eye irritation Category III (EPA classification). No dermal sensitisation in Buehler test; may cause dermal sensitisation in guinea pig maximisation test.

Inhalation LC₅₀ (4 h) for rats >5.14 mg/l.

NOEL Chronic NOAEL (2 y) for rats 4.8 mg/kg b.w. daily. Ethylenethiourea chronic NOAEL (2 y) for rats 0.37 mg/kg b.w. daily. Below parentally toxic levels, mancozeb was observed to have no effect on reproduction, on neonatal survival, or on growth or development.

12. ECOLOGICAL INFORMATION

Copper oxy chloride Substance:

Birds Dietary LC₅₀ (8 d) for bobwhite quail 167.3 mg Cu/kg b.w. daily.

Fish LC₅₀ (96 h) for rainbow trout 0.217 mg Cu/l.

Daphnia LC₅₀ (48 h) 0.29 mg Cu/l.

Algae E_bC₅₀ 56.3 mg Cu/l; E_rC₅₀ >187.5 mg Cu/l.

Bees LD₅₀ (oral) 18.1 µg Cu/bee; (contact) 109.9 µg Cu/bee.

Worms LC₅₀ (14 d) >489.6 mg/kg soil.

Mancozeb

Birds Acute oral LD₅₀ (10 d) for mallard ducks >5500, Japanese quail 5500, English sparrows (*Passer domesticus*) >1290, European starlings (*Sturnus vulgaris*) >2400

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mg/kg. Acute dietary LC₅₀ (8 d) for bobwhite quail and mallard ducks >5200 mg/kg diet. Chronic reproduction NOEL for mallard ducks 125, bobwhite quail 300 mg/kg diet.

Fish LC₅₀ (96 h, flow-through) for rainbow trout 1.0, bluegill sunfish >3.6 mg/l. NOEC (34 d, early life-stage) for fathead minnows 0.022 mg/l; extended growth NOEC (14 d) for rainbow trout 0.66 mg/l.

Daphnia EC₅₀ (48 h, flow-through) 3.8 mg/l.

Algae EC₅₀ (120 h, cell density) for *Selenastrum capricornutum* 0.044 mg/l.

Other aquatic spp. EC₅₀ (24 h) for rotifers (*Brachionus calyciflorus*) 0.11 mg/l; LC₅₀ (48 h) for snails (*Lymnae stagnalis*) >113, amphipods (*Gammarus* sp.) 3.0, isopods (*Asellus* sp.) 4.4 mg/l. Outdoor mesocosm (11 w, macroinvertebrates and phytoplankton communities), after 8 applications, EAC 0.032 mg/l.

Bees LD₅₀ (oral) >209 µg/bee; (contact) >400 µg/bee.

Worms LC₅₀ (14 d) for *Eisenia foetida* >1000 mg/kg soil; (56 d) reproduction NOEC for *Eisenia foetida* 20 mg/kg soil.

Cymoxanil

Birds Acute oral LD₅₀ for bobwhite quail and mallard ducks >2250 mg/kg. Dietary LC₅₀ (8 d) for bobwhite quail and mallard ducks >5620 mg/kg diet.

Fish LC₅₀ (96 h) for rainbow trout 61, bluegill sunfish 29, common carp 91, sheepshead minnows >47.5 mg/l.

Daphnia LC₅₀ (48 h) 27 mg/l.

Algae EC₅₀ (5 d) for *Selenastrum capricornutum* 1.21 mg/l; EC₅₀ for *Anabaena flos-aquae* 231 ppb.

Other aquatic spp. LC₅₀ (96 h) for eastern oysters >46.9, mysid shrimps >44.4 ppm.

Bees Not toxic to bees; LD₅₀ (48 h, contact) >25 µg/bee; LC₅₀ (48 h, oral) >1000 ppm.

Worms LC₅₀ (14 d) >2208 mg/kg soil.

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13. DISPOSAL INFORMATION

Product: Wastes should be disposed of with household waste. The remaining amount of waste must not be poured into a sewage canal. Hazardous waste should be disposed of according to control regulations.

Contaminated Packing: Empty containers should be used for other products. Completely emptied and shaken containers must be properly disposed. Uncontaminated packaging should be disposed of as hazardous waste.

14. TRANSPORT INFORMATION

ADR/RID/ADNR

UN-No. : 3088
DangerSignal : 4.2
PackagingGroup : III
Property of the product : UN 3088 SELF-HEATING SOLID, ORGANIC, N.O.S.
(Contains Copper oxy chloride, mancozeb ve cymoxanil.)



IMDG

UN-No. : 3088
Class : 4.2
PackagingGroup : III
SeaPollutant : Yes
Property of the product : UN 3088 SELF-HEATING SOLID, ORGANIC, N.O.S.
(Contains Copper oxy chloride, mancozeb ve cymoxanil.)

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ADR/RID/ADNR

UN-No. : 3088

DangerSignal : 4.2

PackagingGroup : III

Property of the product : UN 3088 SELF-HEATING SOLID, ORGANIC, N.O.S.
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15. REGULATORY INFORMATION

This form is based on SAFETY DATA FORMS AND REGULATION ABOUT THE PREPARATION AND DISTRIBUTION OF HAZARDOUS SUBSTANCES (dated 26/12/2008 and 27092 numbered).

Hazard Signal and Symbol:



Xn: Hazardous



N: Dangerous for the environment

Hazardous Substance sFound On The Label:

Contains Copper oxy chloride, mancozeb ve cymoxanil.)

Risk Phrases

Health:

R 20/22 - Harmful by inhalation and if swallowed.

R43 - May cause sensitisation by skin contact.

R63 - Possible risk of harm to the unborn child.

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Environment:

R50/53: May cause long-term adverse effects in aquatic environments.

Safety Phrases:

S1/2 : Keep out of reach of children

S13 : Keep away from food, drink and animal feed stuffs

S 24 : : Avoid contact with skin

S 29 : Do not empty into drains.

S 36/37 : Wear suitable protective clothing and gloves.

S 46 : If swallowed, seek medical advice immediately and show this container or label

S 56 : Remove this material and its jar in special waste collection point.

Important Labeling:

To avoid from risks to man and environment, comply with the instruction of use.

16. OTHER INFORMATIONS

Xi : Irritant

Xn : Harmful

N : Dangerous for the environment

Repr Cat 3 : Possible risk of impaired fertility

Risk phrases mentioned in Section 2:

R 20/22 - Harmful by inhalation and if swallowed.

R43 - May cause sensitisation by skin contact.

R50 - Very toxic to aquatic organisms.

R50/53: May cause long-term adverse effects in aquatic environments.

R63 - Possible risk of harm to the unborn child.

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PreparedBy : Remzican KARAN

This security information form is additional to manufacturer firm's instructions, however does not replace within structions. This form contains regulation criteria for preparation of security form preparation. This form is based on safety data forms and regulation about the preparation and distribution of hazardous substances (dated 26/12/2008 and 27092 numbered). Please, the relevant institutions and individuals act according to this regulation.