# MATERIAL SAFETY DATA SHEET

**SHARDA Tebuconazole 45 WDG** **MSDS DATE: 4/15/2010**

## SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

| | |
|---|---|
| PRODUCT NAME | SHARDA Tebuconazole 45 WDG |
| SYNONYMS | |
| EPA REGISTRATION NO. | 4581-416-83529 |
| MANUFACTURER | Sharda USA LLC |
| ADDRESS | 7460 Lancaster Pike, Suite 9<br>Hockessin, DE 19707 |
| PHONE | (302) 234-2780 |
| FAX: | (302) 234-7570 |
| EMAIL: | shardain@vsnl.com |
| WEBSITE: | www.shardaintl.com |
| EMERGENCY PHONE | 1(800) 222-1222 |
| CHEMTREC PHONE | 1(800) 424-9300 |
| CHEMICAL NAME | Tebuconazole |
| CHEMICAL FAMILY | Triazole |
| CHEMICAL FORMULA | C16H22ClN3O |
| PRODUCT USE | Fungicide |
| PREPARED BY | Sharda USA |

## SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical Name | CAS No. | Weight % | OSHA PEL |
|---|---|---|---|
| Tebuconazole Tech | 107534-96-3 | 45 | N/A |

## SECTION 3: HAZARDS IDENTIFICATION

**EMERGENCY OVERVIEW : Caution.** May cause eye and skin irritation. May cause irritation of respiratory tract.

Appearance Off-white
Physical state: Free flowing granules
Odor No characteristic odor

**POTENTIAL HEALTH EFFECTS**

Acute effect This material may cause irritation to eyes, skin and respiratory tract. The material is identified as a low hazard to birds, earthworms, and bees.

## SECTION 4: FIRST AID MEASURES

**FIRST AID**

**If swallowed:**
- Call a physician or poison control centre immediately .
- Never give anything by mouth to unconscious person
- Do not induce vomiting unless told to do so by a poison control centre or doctor

**If on skin:**
- Take off contaminated clothing
- Rinse skin immediately with plenty of water for 15-20 minutes.
- Call poison control centre or doctor for treatment advice.

**If inhaled**
- Move person to fresh air.
- If person is not breathing, call 911 or an ambulance, then give artificial respiration
- Call poison control centre or doctor for further treatment advice

**If in eyes:**
- Hold eyes open and rinse slowly and gently with water for 15-20 minutes.
- Remove contact lenses, if present, after 5 minutes, then continue rinsing eye.
- Call poison control centre or doctor for treatment advice.

**HOT LINE NUMBER**

Notes to Physician: No information available

Have a product container or label with you when calling a poison control center or doctor, or going for treatment. For 24-hour medical emergency assistance (human or animal) call 1-800-222-1222. For chemical emergency assistance (spill, leak, fire, or accident) call ChemTrec at 1-800-424-9300.

## SECTION 5: FIRE-FIGHTING MEASURES

Flammable and Explosive Properties

| | |
|---|---|
| Flash point | Not available |
| Autoignition temperature | Not available |
| Flammability Limits in Air | Not available |
| Extinguishing media | Water spray foam Dry chemical Carbon Dioxide(CO2) |
| Fire /Explosion Hazard | Toxic vapors may be released in the event of fire |
| Hazardous combustion product | Carbon monoxide ,oxides of nitrogen |

**NFPA** **Health** 1 **Flammability** 0 **Instability** 0

## SECTION 6: ACCIDENTAL RELEASE MEASURES

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| Personal protection | Avoid contact with the skin and the eyes. Use personal protective equipment. |
| Environmental protection | Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits. |
| Methods for clean-up | Sweep up and shovel into suitable container for disposal |

## SECTION 7: HANDLING AND STORAGE

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|---|---|
| Handling | Do not eat, drink or smoke when using this product. Keep out of reach of children. Remove and wash contaminated clothing before re-use. Wash thoroughly after handling |
| Storage | Keep out of reach of children. Keep in dry, cool and well ventilated place. Keep away from direct sunlight |

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

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| Exposure guidelines: | This product does not contain any hazardous material with occupational exposure limits established by region specific regulatory bodies |
| Engineering controls | Investigate Engineering techniques to reduce exposures. Local mechanical exhaust ventilation in preferred. Consult ACGIH ventilation manual or NFPA standard 91 for design of exhaust systems |

**Personal Protective Equipment**

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|---|---|
| Eye/Face protection | Where there is potential for eye contact has eye flushing equipment available. Use eye protection to avoid eye contact |
| Skin protection | Wear protective gloves/clothing |
| Respiratory Protection | Where airborne exposure is likely, use NIOSH approved respiratory protection equipment appropriate to the material and/or its components. Full face piece equipment is recommended and, if used, replaces need for face shield and /or chemical goggles. If exposure can not be kept at minimum exposure Engineering control, consult respirator manufacturer to determine appropriate type equipment for give application. Observe respirator use limitations specified by NIAOSH or the manufacturer. For emergency and other condition where there may be a potential for significant exposure, use an approved full face positive-pressure ,self-contained breathing apparatus. Respiratory protection. Programs must comply with 29 CFR 1910.134. |
| General Hygiene condition | Do not eat, drink or smoke when using this product. Wear suitable gloves and eye/face protection Wash hands and face before breaks and immediately after handling the product. Remove and wash contaminated clothing before re-use |

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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|---|---|
| Appearance | Off-White |
| Physical state | Free flowing granules |
| Boling point range | Not available |
| Specific gravity | Not available |
| Evaporation rate | Not available |
| Vapor density | Not available |
| Viscosity | Not available |
| Bulk density | 0.45-0.6 g/cm3 |
| Percent volatiles | Not available |
| Odor | No characteristic odor |
| pH | Approx.7 |
| Melting point/Range | Not available |
| Solubility | Dispersible in water |
| Vapor pressure | Not available |
| VOC content | Not available |
| Molecular weight | No data available |
| Percent solids | Not available |

## SECTION 10: STABILITY AND REACTIVITY

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|---|---|
| Stability | Stable under recommended storage condition |
| Condition to avoid | Excessive heat and open flame. Aviod creating dusty conditions |
| Incompatible materials | Oxidizers |
| Hazardous decomposition product | Carbon monoxide. Nitrogen oxides(NOx) |
| Possibility of hazardous polymerization | hazardous polymerization does not occure |

## SECTION 11: TOXICOLOGICAL INFORMATION

**Acute toxicity**

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|---|---|
| Product information | Tebuconazole 45 DF |
| Oral LD50 (rat) | =>2000 mg/kg |
| Dermal LD50 (rat) | =>2000 mg/kg |
| Inhalation LC50 (rat) | =>2.010 mg/l ,4 hr |
| Eye Contact(Rabit) | Mildly irritating to eyes |
| Skin Irritation | Not an irritant |
| Skin Sensitization (Guinea Pig) | Not a sensitizer |

**Chronic toxicity**

**Carcinogenicity**

Tebuconazole (Active ingredient )

***Subchronic toxicity:***
In dermal studies with rabbit NOEL was 1000 mg/kg
A three week inhalation study with rat the NOEL was 10.6 mg/$m^3$

***Chronic toxicity :***
In chronic dog studies Tebuconazole was administered for 52 weeks at dietary concentrations of 40,100,150,200 or 1000 ppm

Due to lack of significant effect the high dose was increased to 2,000 ppm at 40 weeks for remainder of study. At the high dose effects relating to liver, spleen, ocular and adrenal were observed. The overall NOEL from these studies was 100 ppm based on adrenal effects. In a 2-year study, Tebuconazole was administered to rats at dietary concentrations of 100,300 or 1000 ppm. There was reduction in body weight gains and an increased incidence of liver and spleen effects at the high dose. The NOEL was 300 ppm

***Carcinogenicity:***
There was no indication of a carcinogenic effect in rats or mice when tested at dose levels up to and including the maximum tolerated dose(MTD)for each species. An increased incidence of heptaocellular neoplasms occurred in mice at dose level approximately three fold greater than MTD

***Mutagenicity:***
In vitro and in vivo mutagenicity studies conducted on Tebuconazole have been negative .

***Developmental toxicity:***
In mice treated at dose levels ranging from 1-1000 mg/kg,the NOELs for maternal and developmental toxicity were 3 and 10 mg/kg respectively. In rats treated at dose levels of 30,60 or 120 mg/kg, the NOELs for maternal and developmental toxicity were 30 and
60 mg/kg respectively .For rabbits ,the NOELs for maternal and developmental toxicity were less than 10 and 30 mg/kg respectively
In dermal teratology studies on rats and mice, Tebuconazole was administered during gestation at dose levels of 100,300 or 1000 mg/kg. In rats, there was no indication of maternal and developmental toxicity were 100 and 300 mg/kg respectively

***Reproduction :***
In a reproduction study in rats, smaller litter sizes and decreased pup weight gain was observed in conjunction with ,maternal toxicity at the high concentration. The maternal and reproductive NOEL was 300 ppm

***Neurotoxicity:***
In an acute neurotoxicity screening study, Tebuconazole was administered to rats as s single oral dose at doses of 100,500 or 1000 mg/kg for males and 100,250, or 500 mg/kg for females. Treatment related clinical signs of toxicity and transient neurobehavioral effects were evident In both sexes. There were no treatment related microscopic lesions within the skeletal muscle or neutral tissues. Based on these results the NOEL for neuropathology was 1000 mg/kg for males and 500 mg/kg for females, the highest dose tested. The overall NOEL was less than 100 mg/kg for both sexes. In a 13 week neurotoxicity screening study in rats,body weight and food consumption was reduced at high dose, functional observational battery(FOB) and automated measures of motor and locomotor activity were not affected by treatment ,there were no treatment related

microscopic lesions in neutral tissues or skeletal muscle in any of the treated animals, and there was no evidence of neurotoxicty at any dietary concentration. The NOEL for overall toxicity was 400 ppm. In one generation developmental neurotoxicity study, Tebuconazole was administered to rats during gestation and postnatal development. Maternal toxicity observed included decreased body weight and feed consumption, mortality, prolonged gestation and alopecia. Effects observed in the offspring included mortality, developmental delay, and decrease in number of liveborn, viability index,body weight gain,absolute brain weight and cerebellar thickness.Teuconazole did not cause any specific neurobehavioral effects in the offspring. The NOEL for both maternal and F1 offspring toxicity was 300 ppm

## SECTION 12: ECOLOGICAL INFORMATION

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| For Active Ingredient | Tebuconazole has low hazard to birds, earthworms and bees. It is moderately toxic to fish and aquatic organisms. |
| Fish toxicity | LC50(96 hr) Bluegill sunfish = 5.7 mg/L<br>LC50(96 hr) Trout = 4.4 mg/L<br>freshwater fish (96 hr LC50 4.4-5.7 m/l) |
| Daphnia Toxicity | This material is moderately toxic to daphnia (93% after 30 days) and |
| Bird Toxicity | Acute orals LD50 bobwhite quail=1988 mg/kg<br>Acute orals LD50 male Japanese quail = 4438 mg/kg<br>Acute orals LD50 female Japanese quail = 2912 mg/kg |
| Bacteria Toxicity | EC50 activated sludge micro-organism >10000 mg/L |
| Environmental Fate | The photolysis /metabolism half-life of Tebuconazole is 2-3 months in natural water. It is strongly bound to soil and has low mobility bioconcentration factor (BCF)=78 |

## SECTION 13: DISPOSAL CONSIDERATIONS

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| Waste Disposal Method | Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide or rinsate is a violation of Federal law. If the wastes cannot be disposed of by use or according to label instructions, contact your state Pesticide or Environmental control Agency or the Hazardous Waste representative at the nearest EPA regional office for guidance. |
| Contaminated Packaging | Empty containers should be taken for local recycling, recovery or waste disposal. |

## SECTION 14: TRANSPORT INFORMATION

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|---|---|
| DOT | Not regulated |
| ICAO | Not regulated |
| IATA | Not regulated |
| IMDG/IMO | Not regulated |

## SECTION 15: REGULATORY INFORMATION

International Inventories
Tebuconazole Tech

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|---|---|
| EINECS/ELINCS | Listed |
| ENCS | Listed |
| CHINA | Listed |
| KECL | Listed |

USA

Federal Regulations

SARA 313
Section 313 of title III of the Superfund Amendments and Reauthorisation Act of 1986 (SARA).This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40n of the Code of Federal Regulations,Part 372 chemicals which are subject to the reporting requirements of the Act and Title 40n of the code of Federal regulations, Part 372

SARA 311/312 Hazardous Categorization

| | |
|---|---|
| Chronic Health Hazard | No |
| Acute Health Hazard | Yes |
| Fire Hazard | No |
| Sudden release of Pressure Hazard | No |
| Reactive hazard | No |

Clean Water Act

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs)(see 40 CFR 61)
This product does not contain any Proposition 65 chemicals

State right-to-know
International Regulations

| | |
|---|---|
| Mexico-Grade | Not Available |

Canada
This product has been classified in accordance with the hazard criteria of the controlled Products Regulations (CPR).

WHMIS Hazard Class

Not determined

## SECTION 16: OTHER INFORMATION

PREPARATION INFORMATION: MSDS DATE 4/15/2010
REVISION DATE
DISCLAIMER: This product is a registered agricultural chemical and must therefore be used in accordance with the container label directions. The information contained herein is given in good faith and is believed to be correct, but no warrant, express or implied is made. Consult Sharda USA LLC for further information.