1. IDENTIFICATION

Product name:	**Orius 3.6 F**
Chemical name of active ingredient(s):	Tebuconazole: a-(2-(4-Chlorophenyl)ethyl)-a-(1-1-dimethylethyl)-1H-1,2,4-triazole-1-ethanol
Chemical family:	Triazole
Manufacturer:	Makhteshim-Agan of North America 551 Fifth Avenue, Suite 1100 New York, NY 10176 Phone: 212-661-9800
For fire, spill, and/or leak emergencies, contact Infotrac:	Phone: 1-800-535-5053
For medical emergencies and health and safety inquiries, contact Prosar:	Phone: 1-877-250-9291

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMMON NAME	CAS NO.	%	OSHA PEL	ACIGH TLV
Tebuconazole	80443-41-0	39	NE	NE
Ingredient #1979*	--	1-3	NE	NE
Ingredient #2035*	--	1-3	NE	NE

NE=None established
* Specific chemical identity is withheld as a trade secret

3. HAZARDS IDENTIFICATIONS

EMERGENCY OVERVIEW
CAUTION. Harmful if swallowed, inhaled or absorbed through skin. Avoid contact with skin, eyes, and clothing. Avoid breathing vapor or spray mist.

PHYSICAL PROPERTIES
Appearance: Off-white liquid, suspension
Odor: Chalky

LIKELY ROUTES OF EXPOSURE
Inhalation; skin contact; skin absorption; eye contact.

SYMPTOMS OF ACUTE EXPOSURE
This material is slightly irritating to the skin and minimally irritating to the eyes. This material is mildly toxic by the oral and dermal routes.

SYMPTOMS OF CHRONIC EXPOSURE
Based on toxicity studies of the active ingredient, tebuconazole, there may be toxic effects on the following organs: spleen, liver, adrenals, and lens of the eye.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE
No specific conditions are known which may be aggravated by exposure to this product.

HAZARDOUS DECOMPOSITION PRODUCTS
Fire or other extreme conditions may produce CO_2 and oxides of nitrogen.

4.FIRST AID MEASURES

FIRST AID

IF SWALLOWED:
- Call a poison control center or doctor immediately for treatment advice.
- Have person sip a glass of water if able to swallow.
- Do not induce vomiting unless told to by a poison control center or doctor.
- Do not give anything by mouth to an unconscious person.

IF ON SKIN OR CLOTHING:
- Take off contaminated clothing.
- Rinse skin immediately with plenty of water for 15-20 minutes.
- Call a poison control center or doctor for treatment advice.

IF IN EYES:
- Hold eye open and rinse slowly and gently with water for 15-20 minutes.

- Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.
- Call a poison control center 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, preferably mouth-to-mouth if possible.
- Call a poison control center or doctor for further treatment advice.

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact PROSAR at 1-887-250-9291 for emergency medical treatment information.

Note to Physicians: No specific antidote. Treat symptomatically. The compound doesn't cause any definite symptoms that would be diagnostic. Contact with the eyes may cause irritation.

5. FIRE FIGHTING MEASURES

FLASH POINT: >200° F

EXTINGUISHING MEDIA: Water, carbon dioxide (CO_2), dry chemical, foam..

HAZARDOUS DECOMPOSITION PRODUCTS
Fire or other extreme conditions may produce CO_2 and oxides of nitrogen.

FIRE-FIGHTING PROCEDURES
Keep out of smoke; cool exposed containers with water spray. Fight fire from upwind position. Use self-contained breathing equipment. Contain run-off by diking to prevent entry into sewers or waterways. Equipment or materials involved in pesticide fires may become contaminated.

6. ACCIDENTAL RELEASE MEASURES

ACTION TO TAKE FOR SPILLS/LEAKS: Isolate area and keep unauthorized people away. Do not walk through spilled material. Avoid breathing vapors and skin contact. Remove sources of ignition if combustible or flammable vapors may be present and ventilate area. Wear proper protective equipment. Dike contaminated area with absorbent granules, soil, sand, etc. if large spill, material should be recovered. Small spills can be absorbed with absorbent granules, spill control pads, or any absorbent material. Carefully sweep up absorbed spilled material. Place in covered container for reuse or disposal. Scrub contaminated area with soap and water. Use dry absorbent materials such as clay granules to absorb and collect wash solution for proper disposal. Contaminated soil may have to be removed and disposed. Do not allow material to enter streams, sewers or other waterways or contact vegetation.

7. HANDLING AND STORAGE

HANDLING: Prevent eating, drinking, tobacco usage and cosmetic application in areas where there is a potential for exposure to the material. Wash hands thoroughly after handling this product.

STORAGE: Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area. Handle and open container in a manner as to prevent spillage. If container is leaking, invert to prevent leakage. If the container is leaking or material is spilled refer to Section 6: ACCIDENTAL RELEASE MEASURES.

STORAGE TEMPERATURES: There is no minimum storage temperature. The 30-day average for the maximum storage temperature should not exceed 100° F. Extreme heat should be avoided.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EYE PROTECTION REQUIREMENTS: Use splash-proof goggles, if needed, to prevent liquid from getting into eyes.

SKIN PROTECTION REQUIREMENTS: Wear long sleeves and trousers to prevent skin contact.

HAND PROTECTION: Wear chemical resistant gloves.

VENTILATION REQUIREMENTS: Control exposure levels through the use of general and local exhaust ventilation.

ADDITIONAL PROTECTIVE MEASURES: Clean water should be available for washing in case of eye or skin contamination. Educate and train employees in safe use of this product. Follow all label instructions. Launder clothing after use. Prevent eating, drinking, tobacco usage and cosmetic application in areas where there is a potential for exposure to the material. Wash hands thoroughly after handling product.

APPLICATORS AND OTHER HANDLERS MUST WEAR:

- Long-sleeve shirt and long pants;
- Chemical resistant gloves (such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, polyvinyl chloride or viton).
- Shoes plus socks.

Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Off-white liquid, suspension.
ODOR: Chalky
MOLECULAR WEIGHT: 307.8 (for tebuconazole)
pH: 7.0
FLASH POINT: <200° F
FREEZING POINT: < 32° F
VISCOSITY: 800-1200 cps @ 25° C
SOLUBILITY IN WATER: Dispersible
SPECIFIC GRAVITY: 1.12 @ 20° C
BULK DENSITY: 32 ppm @ 20° C (for tebuconazole)
VAPOR PRESSURE: 9.8 X 10^{-9} mm Hg @ 20° C (for tebuconazole)

10. STABILITY AND REACTIVITY

STABILITY: This product is stable under normal warehouse conditions.
CONDITIONS TO AVOID: None known.
MATERIALS TO AVOID: None known.
HAZARDOUS POLYMERIZATION: Not known to occur.
HAZARDOUS DECOMPOSITION PRODUCTS: Fire or other extreme conditions may produce CO_2 and oxides of nitrogen.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY/IRRITATION STUDIES

Acute Oral LD_{50} (Rat):	3,776 mg/kg (male); 3,710 mg/kg (female)
Acute Dermal LD_{50} (Rat):	>2,011 mg/kg (male and female)
Acute Inhalation LC_{50} (Rat):	>2.510 mg/L air (4-hours)
Eye Irritation (Rabbit):	Minimal (non-remarkable) irritation
Dermal Irritation (Rabbit):	Slight dermal irritation
Dermal Sensitization (Guinea pig):	Not a dermal sensitizer

SUBCHRONIC TOXICITY
In dermal toxicity studies using rabbits, tebuconazole was administered at doses up to and including 1,000 mg/kg for 6 hours/day, 5 days/week for a period of 3 weeks. There were no local or systemic effects observed at any of the levels tested. The no-observed-effect-level (NOEL) was 1,000 mg/kg. In a 3-week inhalation study, rats were exposed to tebuconazole for 6 hours/day, 5 days/week at aerosol concentrations of 1.2, 10.6 or 155.8 mg/m^3. Liver enzyme effects were observed at the high concentration. 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 a lack of significant effects, the high dose was increased to 2000 ppm at

40 weeks for the remainder of the 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 a reduction in body weight gains and an increased incidence of liver and spleen effects at the high dose. The NOEL was 300 ppm.

CARCINOGENICITY
Tebuconazole was investigated for carcinogenicity in feeding studies using rats and mice. There was 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 hepatocellular neoplasms occurred in mice at a dose level approximately three fold greater than the MTD.

MUTAGENICITY
Numerous in vitro and in vivo mutagenicity studies have been conducted on tebuconazole, all of which are negative.

DEVELOPMENTAL TOXICITY
Tebuconazole has been evaluated for developmental toxicity in oral studies using mice, rats and rabbits. In mice treated at dose levels ranging from 1-100 mg/kg, the NOELs for maternal and developmental toxicity were 3 and 10 mg/kg, respectively. When rats were 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 treated at dose levels of 10, 30 or 100 mg/kg, 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 maternal or developmental toxicity, therefore, the maternal and developmental NOEL was 1000 mg/kg. In mice, the NOELs for maternal and developmental toxicity were 100 and 300 mg/kg, respectively.

REPRODUCTION TOXICITY
In a reproduction study, tebuconazole was administered to rats at dietary concentrations of 100, 300 or 1000 ppm for 2 generations. Smaller litter sizes and decreased pup weight gain was observed in conjunction with maternal toxicity at the high concentration. The maternal and reproduction NOEL was 300 ppm.

NEUROTOXICITY
In an acute neurotoxicity screening study, tebuconazole was administered to rats as a 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 neural 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 subsequent study, an overall NOEL of 50 mg/kg was established for both sexes. In a 13-week neurotoxicity screening study, tebuconazole was administered to rats at dietary concentrations of 100, 400 or 1600 ppm. Body weight and food consumption was reduced at the 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 neural tissues or skeletal muscle in any of the treated animals. There was no evidence of neurotoxicity at any dietary concentration. The NOEL for microscopic lesions was 1600 ppm, the highest concentration tested. The NOEL for overall toxicity was 400 ppm. In a one-generation developmental neurotoxicity study, tebuconazole was administered to rats at dietary concentrations of 100, 300 or 1000 ppm 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 decreases in number of live-born, viability index, body weight gain, absolute brain weight and cerebral thickness. Tebuconazole did not cause any specific neurobehavioral effects in the offspring. The NOEL for both maternal and F1 offspring toxicity was 300 ppm.

12. ECOLOGICAL INFORMATION

This product is toxic to estuarine and marine invertebrates. As with other similar products, this product should be used according to label directions and should be kept out of streams, lakes and other aquatic habitats.

13. DISPOSAL CONSIDERATIONS

DISPOSAL: Wastes resulting from the use of this product that cannot be used according to the label instructions must be disposed of according to Federal, State, or local procedures. For guidance in proper disposal methods, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office.

CONTAINER DISPOSAL: Triple rinse (or equivalent) the empty container and offer for recycling or reconditioning or puncture and dispose of in a sanitary landfill, or by incineration, or by open burning, if allowed by state and local authorities. If burned, keep out of smoke.

14. TRANSPORT INFORMATION

DOT CLASSIFICATION: Not regulated
Item 102120 [Insecticides, Fungicides, Insect or Animal Repellants] Class 60

INTERNATIONAL TRANSPORTATION:
IMO (vessel): Not regulated

IATA (air): Not regulated

15. REGULATORY INFORMATION

SARA TITLE III CLASSIFICATION:

Section 302:	Not applicable
Section 311/312:	Acute health hazard (immediate) Chronic health hazard (delayed)
Section 313:	Not applicable

CA PROPOSITION 65: Not applicable

CERCLA RQ: Not applicable

RCRA CLASSIFICATION: Not applicable

TSCA STATUS: Not applicable

16. OTHER INFORMATION

NFPA HAZARD RATINGS	**NFPA**		
HEALTH:	1	1	SLIGHT
FLAMMABILITY:	1	2	MODERATE
REACTIVITY:	1	3	HIGH
		4	SEVERE

MSDS issued: 02-16-2005

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