MATERIAL SAFETY DATA SHEET

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

COMPANY ADDRESS:
REPAR CORPORATION
Silver Spring, MD 20914

EMERGENCY TELEPHONE NUMBERS:
(800) 424-9300 (CHEMTREC, transportation and spills)

PRODUCT NAME : **TEBUCON 45 DF Fungicide**
CHEMICAL NAME : Tebuconazole:
α-[2-(4-chlorophenyl)ethyl]-α-(1,1-dimethylethyl)-1H-1,2,4-triazole-1-ethanol

CHEMICAL FAMILY : Triazole fungicide
PRODUCT CODE : EPA Reg. No. 69361-18

SECTION 2 - COMPOSITION, INFORMATION OF INGREDIENTS

HAZARDOUS COMPONENT NAME	CAS NUMBER	Average % by Weight
Tebuconazole	107534-96-3	45.0
Hi-Sil 233	11926-00-8	1.0

SECTION 3 – HAZARDS IDENTIFICATION SUMMARY

(As defined by OSHA Hazard Communication Standard, 29 CFR 1910.1200)

Note: Please refer to Section 11 for detailed toxicological information.

Emergency Overview Warning! Cause substantial but temporary eye injury. Harmful if swallowed, inhaled or absorbed through the skin. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Do not get in eyes, on skin, or on clothing. Avoid breathing dust or spray mist.

Physical State Solid granular

Appearance Tan

Routes of Exposure Inhalation, Skin Contact, Skin Absorption, Eye Contact

Immediate Effects

Eye Causes substantial but temporary eye injury. Do not get in eyes

Skin Harmful if absorbed through skin. May cause slight irritation. May cause sensitization by skin contact. Avoid contact with skin and clothing.

Ingestion Harmful if swallowed. Do not take internally.

Inhalation Harmful if inhaled. Avoid breathing dust or spray mist.

Chronic or Delayed Long-Term	This product is not listed as a carcinogen by ACGIH, NTP, IARC or OSHA. However, it may contain crystalline silica (quartz), a substance which has been listed as a carcinogen by ACGIH, NTP and IARC. Crystalline silica is a naturally-occurring mineral component of many sands and clays. Although the carcinogenic potential of crystalline silica in humans is controversial, it must be considered if it is inhaled under excessive exposure conditions. The respirable portion of the silica that may be contained in this product, however, is small, such that excessive inhalation exposure during anticipated conditions of use is unlikely.
Medical Conditions Aggravated by Exposure	No specific medical conditions are known which may be aggravated by exposure to this product. As with all materials which can cause upper respiratory tract irritation, persons with a history of asthma, emphysema, or hyperreactive airways disease may be more susceptible to overexposure. Pulmonary and respiratory diseases may be aggravated by exposure to respirable crystalline silica.

SECTION 4 – FIRST AID MEASURES

General	Have the product container or label with you when calling a poison control center or doctor or going for treatment.
Eye	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.
Skin	Take off all contaminated clothing immediately. Rinse immediately with plenty of water for at least 15 minutes. Call a poison control center or doctor for treatment advice.
Ingestion	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 directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person.
Inhalation	Move 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.
Notes to Physician Treatment	There is no specific antidote. Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended.

SECTION 5 - FIRE FIGHTING MEASURES

Flash Point	Not Applicable
Fire and Explosion Hazards	This product, when mixed with air in critical proportions and in the presence of an ignition source, may present an explosion hazard.
Suitable Extinguishing Media	Water Spray, Carbon Dioxide (CO2), Dry Chemical, Foam

Fire Fighting Instructions	Keep out of smoke. Fight fire from upwind position. Cool closed containers exposed to fire with water spray. Dike area to prevent runoff and contamination of water sources. Equipment or materials involved in pesticide fires may become contaminated. Wear self-contained breathing apparatus and protective suit.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions	Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces.
Methods for Cleaning Up	Avoid creating a dust cloud. Sweep up spilled material. Keep in suitable, closed containers for disposal. Clean contaminated floors and objects thoroughly with water and detergents, observing environmental regulations.
Additional Advice	Use personal protective equipment. Avoid contact with skin. Avoid breathing dust. Do not allow material to enter streams, sewers, or other waterways.

SECTION 7 - HANDLING AND STORAGE

Handling Procedures	Read label carefully before use. Handle and open container in a manner as to prevent spillage. Use only in area provided with appropriate exhaust ventilation.
Storing Procedures	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 reach of children, preferably in a locked storage area.
Work/Hygienic Procedures	Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
Min/Max Storage Temperatures	No minimum / 60 day average temperature not to exceed 37.8^0C / 100^0F

SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION

General Protection	Follow all label instructions. Educate and train employees in safe use of the product. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.
Engineering Controls	Maintain exposure levels below the exposure limit through the use of general and local exhaust ventilation.
Eye/Face Protection	Goggles

Hand Protection Chemical resistant gloves

Body Protection Wear long-sleeved shirt and pants and shoes plus socks.

Respiratory Protection When respirators are required, select NIOSH approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or Industry recommendations.

Exposure Limits

Hydroxy Aluminum Silicate	1332-58-7	ACGIH	TWA	2mg/m3
		Expressed as	as Al	
		NIOSH	REL	2mg/m3
		Expressed as	as Al	
		OSHA Z1A	TWA	2mg/m3
		Expressed as	as Al	
		US CA OEL	TWA PEL	2 mg/m3
Hi – Sil 223	11928-00-8			
		Form of Exposure	Respirable fraction.	
		ACGIH	TWA	0.025 mg/m3
		Form of Exposure	Respirable fraction.	
		NIOSH	REL	0.05mg/m3
		Form of Exposure	Respirable dust	
		OSHA Z1A	TWA	0.1 mg/m3
		Form of Exposure	Respirable dust	
		US CA OEL	TWA PEL	0.1 mg/m3
		Form of Exposure	Respirable dust.	
		US CA OEL	TWA PEL	0.3 mg/m3
		Form of Exposure	Total dust.	
		OSHA Z1	PEL	15 mg/m3
		Form of Exposure	Total dust.	
		OSHA Z1	PEL	5 mg/m3
		Form of Exposure	Respirable fraction	
		Z3	TWA	2.4 millions of particles per cubic foot of air.
		Form of Exposure	Respirable.	
		Remarks		The value is calculated from a specific equation using a value of 100%. Lower values of % will give higher exposure limits. See regulation for specific equation.
		Z3	TWA	0.1mg/m3
		Form of Exposure	Respirable.	
		Remarks		The value is calculated from a specific equation using a value of 100%. Lower values of % will give higher exposure limits. See regulation for specific equation.
		Z3	TWA	0.3mg/m3
		Form of Exposure	Total dust.	

Remarks	The value is calculated from a specific equation using a value of 100%. Lower values of % will give higher exposure limits. See regulation for specific equation.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	tan
Physical State	solid granular
pH (as aqueous solution)	6 - 8 at 23 °C
Bulk Density	33 - 39 lb/cu ft

SECTION 10 - STABILITY AND REACTIVITY

Chemical Stability	stable
Conditions to Avoid	Exposure to moisture Exposure to extreme heat
Hazardous Decomposition Products	Thermal decomposition Carbon monoxide carbon dioxide (CO_2) nitrogen oxides (NO_x)

SECTION 11 - TOXICOLOGICAL INFORMATION

Only acute toxicity studies have been performed on this product as formulated. The non-acute information pertains to the technical-grade active ingredient, tebuconazole.

Acute Oral Toxicity	male rat: LD50: 4,865 mg/kg female rat: LD50: 2,593 mg/kg
Acute Dermal Toxicity	male/female rabbit: LD50: > 2,000 mg/kg
Acute Inhalation Toxicity	male/female rat: LC50: > 0.97 mg/l Exposure time: 4 h Determined in the form of liquid aerosol. (actual) male/female rat: LC50: > 3.88 mg/l Exposure time: 1 h Determined in the form of liquid aerosol. Extrapolated from the 4 hr LC50. (actual)
Skin Irritation	rabbit: slight irritation

Eye irritation rabbit: Mild eye irritation

Sensitization guinea pig: sensitizing

Chronic Toxicity The principal organs affected in rats and dogs from long-term exposure to high doses of tebuconazole included the liver, spleen, adrenals, and/or eyes.

Assessment Carcinogenicity

Tebuconazole was not carcinogenic in a chronic feeding study in rats. In an oncogenicity study in mice, there was an increased incidence of liver tumors at the highest dose tested, a dose 3 x the maximum tolerated dose (MTD). EPA classified tebuconazole as a Group C (possible human carcinogen) chemical based on liver tumors. The Agency used a non-linear methodology approach for determining the Margin of Exposure (MOE) for the estimation of cancer risk. Therefore, EPA has a reasonable certainty that no harm will result from exposure to residues of tebuconazole.

ACGIH		
Hi – Sil 223	11928-00-8	Group A2
NTP		
Hi – Sil 223	11928-00-87	
IARC		
Hi – Sil 223	11928-00-8	Overall evaluation: 1
OSHA		
None.		

Reproductive & Developmental Toxicity REPRODUCTION: Tebuconazole was not considered a primary reproductive toxicant in rats. Decreased pup body weights and smaller litters were observed at the highest concentration but were considered secondary to maternal toxicity.

DEVELOPMENTAL TOXICITY: Tebuconazole was not a primary developmental toxicant in rats, mice and rabbits. Developmental and/or teratogenic effects were observed but were considered secondary to maternal toxicity.

Neurotoxicity Tebuconazole has been tested in acute and subchronic neurotoxicity screening studies in rats. Transient neurobehavioral effects (e.g., decreased motor activity) were observed in the acute study. Neuropathological changes were not observed in either study. Tebuconazole did not cause any specific neurobehavioral effects in the offspring in a one-generation developmental neurotoxicity study in rats.

Mutagenicity Tebuconazole was not mutagenic or genotoxic in a battery of in vitro and in vivo mutagenicity studies.

SECTION 12 – ECOLOGICAL INFORMATION

Environmental Precautions This pesticide is toxic to fish, aquatic invertebrates and marine/estuarine organisms. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Drift and runoff from treated areas may be hazardous to fish/aquatic organisms in adjacent sites. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water.

SECTION 13 - DISPOSAL CONSIDERATIONS

General Disposal Guidance Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Disposal Completely empty container into application equipment, then dispose of empty container in a sanitary landfill, by incineration or by other procedures approved by state/provincial and local authorities. If burned, stay out of smoke.

SECTION 14 – TRANSPORT INFORMATION

TRANSPORTATION CLASSIFICATION:
Not regulated for transportation by any mode

FREIGHT CLASSIFICATION:
Insecticides or Fungicides, N.O.I., other than poison

SECTION 15 – REGULATORY INFORMATION

EPA Registration No. 69361- 18

US Federal Regulations

TSCA list

Hi-Sil 233 11926-00-8

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)
None.

SARA Title III - Section 302 - Notification and Information
None.

SARA Title III - Section 313 - Toxic Chemical Release Reporting
None.

US States Regulatory Reporting

CA Prop65
This product contains a chemical known to the State of California to cause cancer.
Hi-Sil 233 11926-00-8
This product does not contain any substances known to the State of California to cause reproductive harm.

US State Right-To-Know Ingredients
Hi-Sil 233 11926-00-8 IL, MA, MN, RI

Canadian Regulations

Canadian Domestic Substance List
Hi-Sil 233 11926-00-8

Environmental

CERCLA
None.

Clean Water Section 307 Priority Pollutants
None.

Safe Drinking Water Act Maximum Contaminant Levels
None.

International Regulations

European Inventory of Existing Commercial Substances (EINECS)
Hi-Sil 233 11926-00-8

SECTION 16 – OTHER INFORMATION

ABBREVIATIONS
ACGIH = American Conference of Governmental Industrial Hygienists
OSHA = Occupational Safety and Health Administration
TWA = Time Weighted Average
TLV = Threshold Limit Value
PEL = Permissible Exposure Limit

NFPA 704 (National Fire Protection Association):

Health – 2 **Flammability - 1** **Reactivity - 1** **Others - none**

Least - 0, Slight - 1, Moderate - 2, High - 3, Extreme - 4. These values are obtained using professional judgment and were not available in the guidelines or published evaluations prepared by the National Fire Protection
Association.

Reason to Revise: Re-numbered due to system update and new format.

Revision Date: 04-17-08

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