

MATERIAL SAFETY DATA SHEET

Emergency Phone: 800-424-9300
Tenkoz, Inc.
Alpharetta, GA 30202

TENKOZ TRIFLURALIN 10G HERBICIDE

Effective Date: 8/9/00

1. PRODUCT AND COMPANY IDENTIFICATION:

PRODUCT: Tenkoz Trifluralin 10G Herbicide

COMPANY IDENTIFICATION:

Tenkoz, Inc.
100 N. Point Ctr. E., Suite 330
Alpharetta, GA 30202

2. COMPOSITION/INFORMATION ON INGREDIENTS:

Trifluralin: alpha,alpha,alpha-trifluoro-2,6-N,N-dipropyl-p-toluidine	CAS# 001582-09-8	10%
Inert Ingredients, Total, Including:		90%
Clay	CAS# 008031-18-3	
(contains Crystalline Silica)	CAS# 014808-60-7	

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200). In addition, other substances not 'Hazardous' per this OSHA Standard may be listed. Where proprietary ingredient shows, the identity may be made available as provided in this standard.

3. HAZARDOUS IDENTIFICATIONS:

EMERGENCY OVERVIEW

Hazardous chemical. Sage green granule with a mild aromatic odor. May cause eye irritation with corneal injury. LD₅₀ for skin absorption in rabbits is >2000 mg/kg. Avoid breathing dust. Toxic to aquatic organisms.

EMERGENCY PHONE NUMBER: 800-424-9300

POTENTIAL HEALTH EFFECTS: This section includes possible adverse effects, which could occur if this material is not handled in the recommended manner.

EYE: May cause moderate irritation with corneal injury.

SKIN: Prolonged exposure not likely to cause significant skin irritation. A single prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts. The LD₅₀ for skin absorption in rabbits is >2000 mg/kg. Did not cause allergic skin reactions when tested in guinea pigs.

INGESTION: Single dose oral toxicity is low. Single dose oral LD₅₀ has not been determined. Small amounts swallowed incidental to normal handling operations are not likely to cause injury; swallowing larger amounts may cause injury.

INHALATION: Dust may cause irritation to upper respiratory tract (nose and throat).

SYSTEMIC (OTHER TARGET ORGAN) EFFECTS: For trifluralin, effects have been reported on the following organs: upper respiratory tract. In animals, effects have been reported on the following organs: blood, kidney, and liver. Repeated excessive exposure to crystalline silica may cause silicosis, a progressive and disabling disease of the lungs. Some evidence suggests that kidney effects may result from excessive exposures also.

CANCER INFORMATION: A low incidence of urinary tract tumors was seen in only 1 of 5 chronic studies in rats with trifluralin. Trifluralin is not anticipated to be a carcinogenic risk to man. The clay component may contain crystalline silica, which has caused cancer in laboratory animals. This mixture contains a component, which is listed as a carcinogen for hazard communication purposes under OSHA Standard 29 CFR Part 1910.1200. Component listed by IARC and NTP is crystalline silica.

TERATOLOGY (BIRTH DEFECTS): Trifluralin did not cause birth defects; other fetal effects occurred only at doses toxic to the mother.

REPRODUCTIVE EFFECTS: Trifluralin did not interfere with reproduction in animal studies.

4. FIRST AID:

EYES: Irrigate with flowing water immediately and continuously for 15 minutes. Consult medical personnel.

SKIN: Wash off in flowing water or shower.

INGESTION: If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

INHALATION: Remove to fresh air if effects occur. Consult a physician.

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NOTE TO PHYSICIAN: No specific antidote. Supportive care. Treatment based on judgment of the physician in response to reactions of the patient.

5. FIRE FIGHTING MEASURES:

FLASH POINT: Not applicable
METHOD USED: Not applicable

FLAMMABLE LIMITS

LFL: Not applicable
UFL: Not applicable

AUTO-IGNITION TEMPERATURE: No ignition up to 1382°F (750°C)

EXTINGUISHING MEDIA: CO₂ or dry chemical.

FIRE AND EXPLOSION HAZARDS: If product is involved in fire, noxious and toxic fumes may be produced.

FIRE-FIGHTING EQUIPMENT: Wear positive-pressure, self-contained breathing apparatus and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES:

ACTION TO TAKE FOR SPILLS: For small spills, contain and sweep up spilled material. Report large spills to Tenkoz at 800-424-9300. Do not allow spilled material to contaminate water supplies or surface water.

7. HANDLING AND STORAGE:

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

HANDLING: Keep out of reach of children. Causes eye irritation. Avoid breathing dust and contact with skin, eyes, and clothing. Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse.

STORAGE: Store in original container. See product label for handling/storage precautions relative to the end use of this product.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION:

These precautions are suggested for conditions where a potential for exposure exists. Emergency conditions may require additional precautions.

EXPOSURE GUIDELINE: Silica, crystalline: ACGIH TLV 0.05 mg/M³ for quartz, tripoli, and fused silica; 0.05 mg/M³ (respirable) for cristobalite and tridymite. OSHA PEL is 10/%SiO₂ + 2 mg/M³ (respirable) for quartz, tripoli, and fused silica; 1/3 the value calculated from the respirable dust formula for quartz, cristobalite and tridymite. PELs are in accord with those recommended by OSHA, as in the 1989 revision of PELs.

ENGINEERING CONTROLS: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:

RESPIRATORY PROTECTION: Atmospheric levels should be maintained below the exposure guidelines. When respiratory protection is required for certain operations, use a NIOSH approved air-purifying respirator. In dusty atmospheres, use a NIOSH approved dust respirator.

SKIN PROTECTION: No precautions other than clean body-covering clothing should be needed.

EYE/FACE PROTECTION: Use chemical goggles.

APPLICATORS AND ALL OTHER HANDLERS: Refer to the product label for personal protective clothing and equipment.

9. PHYSICAL AND CHEMICAL PROPERTIES:

BOILING POINT: Not applicable
VAPOR PRESSURE: Not applicable
BULK DENSITY: 0.705 g/cm³
SOLUBILITY IN WATER: Not soluble in water
SPECIFIC GRAVITY: Not applicable
APPEARANCE: Free-flowing sage green granule
ODOR: Mild aromatic
pH: (aqueous 50/50) 7.7
MELTING POINT: Not applicable

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10. STABILITY AND REACTIVITY:

STABILITY: (CONDITIONS TO AVOID) Avoid extreme cold or heat.

INCOMPATIBILITY: (SPECIFIC MATERIALS TO AVOID)
None known.

HAZARDOUS DECOMPOSITION PRODUCTS: Will emit toxic vapors as it burns.

HAZARDOUS POLYMERIZATION: Not known to occur.

11. TOXICOLOGICAL INFORMATION:

MUTAGENICITY: For trifluralin: In vitro mutagenicity studies were negative and animal mutagenicity studies were predominantly negative.

12. ECOLOGICAL INFORMATION:

ENVIRONMENTAL DATA:

MOVEMENT AND PARTITIONING:

Based largely or completely on information for trifluralin. Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5). Potential for mobility in soil is slight (Koc between 2000 and 5000).

DEGRADATION AND PERSISTENCE:

Based largely or completely on information for trifluralin. Based on the stringent test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.

ECOTOXICOLOGY:

Based largely or completely on information for trifluralin. Material is very highly toxic to aquatic organisms on an acute basis ($LC_{50}/EC_{50} < 0.1$ mg/L in most sensitive species).

13. DISPOSAL CONSIDERATIONS:

DISPOSAL METHOD: Improper disposal of excess waste, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed by use 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.

14. TRANSPORT INFORMATION:

For DOT regulatory information, if required, consult transportation regulations, product-shipping papers, or consult your Dow AgroSciences representative.

15. REGULATORY INFORMATION:

NOTICE: The information herein is presented in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state or provincial, and local laws. The following specific information is made for the purpose of complying with numerous federal, state or provincial, and local laws and regulations.

U.S. REGULATIONS

SARA 313 INFORMATION: This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

CHEMICAL NAME CAS NUMBER CONCENTRATION

Trifluralin	001582-09-8	10%
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SARA HAZARD CATEGORY: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

An immediate health hazard
A delayed health hazard

TOXIC SUBSTANCES CONTROL ACT (TSCA): All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

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STATE RIGHT-TO-KNOW: The following product components are cited on certain state lists as mentioned. Non-listed components may be shown in the composition section of the MSDS.

CHEMICAL NAME	CAS NUMBER	LIST
Trifluralin	001582-09-8	NJ2 NJ3 PA1 PA3
Silica-Crystalline, Quartz	014808-60-7	NJ3 PA1

NJ2=New Jersey Environmental Hazardous Substance (present at greater than or equal to 1.0%).
NJ3=New Jersey Workplace Hazardous Substance (present at greater than or equal to 1.0%).
PA1=Pennsylvania Hazardous Substance (present at greater than or equal to 1.0%).
PA3=Pennsylvania Environmental Hazardous Substance (present at greater than or equal to 1.0%).

OSHA HAZARD COMMUNICATION STANDARD: This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) RATINGS

Health	2
Flammability	1
Reactivity	0

COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT (CERCLA, or SUPERFUND): This product contains the following substance(s) listed as "Hazardous Substances" under CERCLA, which may require reporting of releases:

Chemical Name	CAS Number	RQ	% in Product
Trifluralin	001582-09-8	10	10%

16. OTHER INFORMATION:

MSDS STATUS: Revised Sections: 3 & 8
Replaces MSDS Dated: 3/18/99

The information provided herein is for a product and represents the results of preliminary investigations. It is offered in good faith, consistent with 29 CFR 1910.1200, recognizing that additional information, including data on hazardous properties, may be developed at a later time. Exercise due care and contact Tenkoz, Inc. at 770-343-8509 for additional information in the future.