

MATERIAL SAFETY DATA SHEET

Emergency Phone: 800-424-9300

TENKOZ MCPA AMINE 4

Effective Date: December 1, 2000

1. PRODUCT AND COMPANY IDENTIFICATION:

PRODUCT: Tenkoz MCPA Amine 4

EPA REG. NO.: 11685-19-55467

COMPANY IDENTIFICATION:

Tenkoz, Inc.
100 N. Point Ctr. E., Suite 330
Alpharetta, GA 30022

2. COMPOSITION/INFORMATION ON INGREDIENTS:

2-methyl-4-chlorophenoxyacetic acid, dimethylamine salt	CAS# 2039-46-5	52.1%
Inert ingredients (trade secret)		47.9%

(The other major ingredient in this product is water)

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

Appearance and Odor: Brown liquid, organic amine odor.

Warning Statements: DANGER-PELIGRO. Keep out of reach of children. Corrosive. Causes irreversible eye damage. Harmful if swallowed or absorbed through skin. Do not get in eyes or on clothing. Avoid contact with skin. Avoid breathing vapors or spray mist.

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POTENTIAL HEALTH EFFECTS:

Likely Routes of Exposure: Inhalation, eye and skin contact.

EYES: Severely irritating.

SKIN: Slightly irritating. Overexposure by skin absorption may cause headache, dizziness, nausea, vomiting, gastrointestinal irritation, weakness and central nervous system depression.

INGESTION: Harmful if swallowed. May cause headache, dizziness, nausea, vomiting, gastrointestinal irritation, weakness and central nervous system depression.

INHALATION: Low inhalation toxicity.

MEDICAL CONDITIONS POSSIBLY AGGRAVATED BY EXPOSURE: Inhalation of product may aggravate existing

chronic respiratory problems such as asthma, emphysema or bronchitis. Skin contact may aggravate existing skin disease.

SYSTEMIC (OTHER THAN TARGET ORGAN) EFFECTS:

CANCER INFORMATION: The International Agency for Research on Cancer (IARC) lists exposure to chlorophenoxy herbicides as a class 2B carcinogen, the category for limited evidence for carcinogenicity in humans. Newer rat and mouse lifetime feeding studies did not show carcinogenic potential for MCPA.

TERATOLOGY (BIRTH DEFECTS): MCPA studies in laboratory animals have shown decreased fetal body weights and delayed development in the offspring at doses toxic to mother animals.

REPRODUCTIVE EFFECTS: Testicular effects and lower male fertility have been noted in animal studies.

4. FIRST AID:

EYES: Hold eyelids open and flush with a steady, gentle stream of water for at least 15 minutes. Get medical attention, preferably an ophthalmologist.

SKIN: Wash with plenty of soap and water. Get medical attention.

INGESTION: Call a physician or Poison Control Center. If patient is conscious and alert, give 1 to 2 glasses of water to drink. Do not induce vomiting. Get medical attention.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. Administer oxygen if necessary. Get medical attention.

NOTE TO PHYSICIAN: No specific antidote is available. All treatments should be based on observed signs and symptoms of distress in the patient. Overexposure to materials other than this product may have occurred. This product is irritating to mucous membranes. If large amounts (greater than 1 ml/kg body weight) of the product have been ingested, the stomach should be evacuated by gastric intubation with the aid of a cuffed endotracheal tube to prevent exposure of the esophagus. After removal of stomach contents, wash stomach by instilling 30 to 50 g of activated charcoal in 3 to 4 ounces of water through the stomach tube and again remove stomach contents. Avoid oily laxatives.

This product contains a phenoxy herbicide. Myotoxic effects may include muscle fibrillations, myotonia, and muscular weakness. Ingestion of massive doses may result in persistent fall of blood pressure. Myoglobin and hemoglobin may be found in urine. Elevations in lactate dehydrogenase

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(LDH), SGOT, SGPT and aldolase indicate the extent of muscle damage.

5. FIRE FIGHTING MEASURES:

FLASH POINT: >230° F (110° C)
METHOD USED: Seta flash.

FLAMMABLE LIMITS

LFL: Not determined.
UFL: Not determined.

AUTO-IGNITION TEMPERATURE: Not determined.

EXTINGUISHING MEDIA: Recommended (large fire): foam, water spray. Recommended (small fires): dry chemical, carbon dioxide.

FIRE AND EXPLOSION HAZARDS: Under fire conditions, toxic, corrosive fumes are emitted. Hydrogen chloride, other chlorine compounds, carbon dioxide, carbon monoxide, oxides of nitrogen and other potentially toxic combustion products may be present. Containers will burst from internal pressure under extreme fire conditions.

FIRE-FIGHTING EQUIPMENT/INSTRUCTIONS: Dike area to prevent runoff and contamination of water sources. Dispose of fire control water later.

PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS:

Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES:

ACTION TO TAKE FOR SPILLS:

Evacuation Procedures and Safety: Wear appropriate protective gear for the situation. See Personal Protection information in Section 8.

Containment of Spill: Dike spill using absorbent or impervious materials such as earth, sand or clay. Collect and contain contaminated absorbent and dike material for disposal.

Cleanup and Disposal of Spill: Pump any free liquid into an appropriate closed container. Collect washings for disposal. Decontaminate tools and equipment following cleanup. (See Section 13.)

Environmental and Regulatory Reporting: Prevent material from entering public sewer system or any waterways. Do not flush to drain. Large spills to soil or similar surfaces may necessitate removal of top soil. The affected area should be removed and placed in an appropriate container for disposal. Spills may be reportable to federal, state and/or local agencies.

7. HANDLING AND STORAGE:

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

HANDLING: Handle containers carefully to avoid damage and spills.

STORAGE: Keep from freezing. Store at temperatures above 45°F (7°C). Frozen material may be thawed in a warm room, but should be mixed thoroughly before use. Store in original container in a dry, secured storage area. Do not contaminate water, food or feed by storage or disposal. Avoid storage in close proximity to insecticides, fungicides, fertilizers and seeds. Keep container tightly closed when not in use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION:

GENERAL: These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended usage, including maintenance and repair of equipment. Contact personal protective equipment manufacturers for assistance with selection, use and maintenance of such equipment.

EXPOSURE GUIDELINE:

Exposure Limits:	OSHA PEL*	ACGIH TLV®*	STEL	Units
2-methyl-4-chlorophenoxyacetic acid, dimethylamine salt	N/E	N/E	N/E	N/Ap

*8-hour TWA unless otherwise noted.

N/E = None Established, N/Ap = Not Applicable

ENGINEERING CONTROLS: Where engineering controls are indicated by specific use conditions or a potential for excessive exposure, use local exhaust ventilation at the point of generation.

RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:

RESPIRATORY PROTECTION: When respirators are required, select NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industrial recommendations. Under normal conditions, in the absence of other airborne contaminants, the following devices should provide protection from this material up to the conditions specified by the appropriate OSHA or ANSI standard(s): Air-purifying (half-mask/full-face) respirator with

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cartridges/canister approved for use against pesticides. Under conditions immediately dangerous to life or health, or emergency conditions with unknown concentrations, use a full-face positive pressure air-supplied respirator equipped with an emergency escape air supply unit or use a self-contained breathing apparatus unit.

SKIN PROTECTION: Skin contact should be avoided through the use of permeation resistant clothing, gloves and footwear, selected with regard for use conditions and exposure potential. An emergency shower should be readily accessible to the work area. Consider both durability and permeation resistance of clothing.

EYE/FACE PROTECTION: Eye and face protection requirements will vary dependent upon work environment conditions and material handling practices. Appropriate ANSI Z87 approved equipment should be selected for the particular use intended for this material. Eye contact should be prevented through use of protective eyewear such as chemical safety glasses with side shields or splash proof goggles. An emergency eye wash should be readily accessible to the work area.

WORK PRACTICE CONTROLS: Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material: (1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored. (2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet.

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

9. PHYSICAL AND CHEMICAL PROPERTIES:

NOTE: Physical data are typical values, but may vary from sample to sample. A typical value should not be construed as a guaranteed analysis or as a specification.

APPEARANCE: Brown liquid.
ODOR: Characteristic organic amine and phenolic.
pH: 7.5 to 10
SPECIFIC GRAVITY: Approximately 1.133
SOLUBILITY IN WATER: MCPA DMA: 866,000 mg/l. Product soluble.
MELTING POINT: Not Applicable.
BOILING POINT: Not Available. Based on components, expected to be >100°C.
VAPOR PRESSURE: MCPA negligible. Product expected to be similar to water.

MOLECULAR

WEIGHT: 245.7 (data on MCPA DMA salt)

10. STABILITY AND REACTIVITY:

STABILITY: This material is stable under normal handling and storage conditions described in Section 7.

INCOMPATIBILITY: Strong oxidizing agents: bases, acids.

CONDITIONS TO BE AVOIDED: Excessive heat.

HAZARDOUS DECOMPOSITION PRODUCTS:

Decomposition Type: Thermal.

Decomposition Products: Hydrogen chloride, other chlorine compounds, carbon dioxide, carbon monoxide, oxides of nitrogen and other potentially toxic combustion products may be present.

HAZARDOUS POLYMERIZATION: Not known to occur.

11. TOXICOLOGICAL INFORMATION:

SUBCHRONIC (Target Organ) EFFECTS: (An adverse effect with symptoms that develop slowly over a long period of time): Repeated overexposure may cause effects to liver, kidneys, blood chemistry, testes and gross motor function. Rare cases of peripheral nerve damage have been reported, but extensive animal studies have failed to substantiate these observations, even at high doses for prolonged periods.

MUTAGENICITY: There have been some positive and some negative studies, but the weight of evidence is that MCPA is not mutagenic.

CARCINOGENICTY: This product contains substances that are considered to be probable or suspected human carcinogens as follows:

Ingredients Name	Regulatory Agency Listing As Carcinogen			
	OSHA	IARC	NTP	ACGIH
Chlorophenoxy herbicides	No	2B	No	No

(Also see Section 3.)

ACUTE TOXICITY (Data on this product):

Eye Irritation: Severely irritating based on potential for irreversible damage (Rabbit).

Skin Irritation: Slightly irritating (Rabbit).

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Dermal: Slightly toxic. (Rabbit LD₅₀ >2020 mg/kg).
Inhalation: Slightly toxic. (Rat 4-hr LC₅₀: > 7.3 mg/L).
Oral: Slightly toxic. (Rat LD₅₀ 935 to 1550 mg/kg).

12. ECOLOGICAL INFORMATION:

ECOTOXICOLOGY:

Aquatic Toxicity (Data on this product):

96-hr LC₅₀ Bluegill: >310 mg/l
96-hr LC₅₀ Rainbow Trout: 230 mg/l
48-hr EC₅₀ Daphnia: 190 mg/l

Avian Toxicity (Data on MCPA dimethylamine salt):

Bobwhite Quail Oral LD₅₀: 478 mg/kg
Mallard Duck 8-day Dietary LC₅₀: >5620 ppm

DEGRADATION AND PERSISTENCE:

Environmental Fate: MCPA dimethylamine salt rapidly dissociates to parent MCPA acid. In soil, MCPA is microbially degraded with typical half-life of approximately 10 to 14 days.

13. DISPOSAL CONSIDERATIONS:

DISPOSAL METHOD: Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide is a violation of Federal Law and may contaminate ground water. If these wastes cannot be disposed of 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.

CONTAINER: Do not reuse empty container. Triple rinse (or equivalent) adding rinsate to application equipment. Then offer empty container for recycling or reconditioning, or puncture and dispose of in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

14. TRANSPORT INFORMATION:

For DOT regulatory information, if required, consult transportation regulations, product shipping papers, or your Tenkoz 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
Not Applicable	Not Applicable	Not Applicable

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.

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:

Ratings for This Product		Key to Ratings	
2	Health Hazard	0	Minimal
1	Flammability	1	Slight
0	Instability	2	Moderate
		3	Serious
		4	Severe

SELECTED STATE REGULATIONS:

This product contains the following components that are regulated under California Proposition 65:

Ingredient Name	Cancer List	Reproductive List	Risk Level (ug/day)	
			California	Supplier
Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

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16. OTHER INFORMATION:

MSDS STATUS: Revised Sections: New
Replaces MSDS dated: New

The Information Herein Is Given In Good Faith, But No
Warranty, Express Or Implied, Is Made. Consult Tenkoz, Inc.
For Further Information.