Safety Data Sheet

Natural Weed Killer

1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY

Product Name: Natural Weed Killer

Product Use: For use as a weed killer for the control of broadleaf weeds and weed grasses.

Company Name: Doctor Kirchner, LLC
Company Address: 8401 Ft. Walton Ave.
Fort Pierce, FL 34951
772-321-4212

Emergency Phone Number: 772-321-4212

2. HAZARD IDENTIFICATION

GHS Classification:

Skin Corrosion/ Irritation	Category 2
Serious Eye Damage/ Irritation	Category 2

Label Elements:

Warning

Hazard Statements:
H315 – Causes skin irritation.
H319 – Causes serious eye irritation.

Precautionary Statements:
P264: Wash exposed skin thoroughly after handling
P280: Wear protective gloves, eye protection

P305+P351+P338: if in eyes, rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P332+P313: If skin irritation occurs, get medical advice/attention.
P337+P313: If eye irritation persists, get medical advice/attention

3. COMPOSITION

Ingredient	CAS No.	Proportion
Water	7732-18-5	80-95%
Acetic Acid	64-19-7	5-8%
Citric Acid	77-92-9	2%
Sodium Chloride	7440-23-5	1%

4. FIRST AID MEASURES

IF INHALED: If symptoms are experienced, remove victim to fresh air. Give artificial respiration only if breathing has stopped. If breathing is difficult, give oxygen. Seek medical attention.
IF IN EYES: Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for at least 30 minutes, while forcibly holding the eyelid(s) open to ensure complete irrigation of the eye tissue. If a contact lens is present, remove only if easy to do so. If irritation persists, seek medical attention.
IF ON SKIN: Remove contaminated clothing. Rinse skin with lukewarm, gently flowing water for minutes. If irritation persists, repeat flushing. Seek medical attention. Completely decontaminate clothing, shoes and leather goods at the scene for safe disposal.
IF SWALLOWED: Have victim rinse mouth thoroughly with water. If vomiting occurs naturally have victim rinse mouth with water again. If irritation or discomfort occur, seek medical attention.

5. FIRE FIGHTING MEASURES

Fire Extinguishing Media: Use means suitable for extinguishing surrounding fire.
Hazards: Carbon monoxide, carbon dioxide and other irritant gases and vapor, which may include unburned acid and toxic constituents, may be generated. Closed containers may rupture violently wen heated.
Recommendations for fire-fighters: In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode.
Further information: Dilute solutions are non-hazardous. In a fire situation, water may boil off resulting in a more concentrated solution, which may become combustible.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protection, equipment and emergency procedures: Wear appropriate personal protective equipment. Ventilate area. Only enter area with PPE. Stop or reduce leak if safe to do so.
Environment related precautions: Prevent product from entering sewers or confined spaces.
Methods and materials for containment and cleaning material:

SMALL SPILLS: Clean up spill with non-reactive absorbent and place in suitable, covered, labelled containers. Flush area with water.

LARGE SPILLS: Contact fire and emergency services and supplier for advice.

7. HANDLING AND STORAGE

Precautions for safe handling: Use proper equipment for lifting and transporting all containers. Use sensible industrial hygiene and housekeeping practices. Wash thoroughly after handling. Avoid all situations that could lead to harmful exposure.
Safe Storing Conditions: Store in a cool, dry, well ventilated area, out of direct sunlight and away from heat and ignition sources. Keep the storage area clear of burnable materials. Store away from incompatible materials.
Incompatibilities: Strong oxidizing agents, pentafluoride, chlorine trifluoride, phosphorus trichloride, p-xylene, strong alkalis or caustics, phosphorous isocyanate, potassium tert-butoxide, ammonium nitrate, most common metals, ammonium thiosulfate, acetaldehyde, 2-amineothanol, chlorosulfonic acid, ethylene diamine, ethyleneimine, oleum.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Occupational Exposure limits:

Component	Regulation	Type of Listing	Value
Acetic Acid	ACGIH	TLV-TWA	10ppm
	ACGIH	STEL	15ppm
	OSHA	TWA	10ppm
	IDLH		50ppm

Engineering Controls:
Ventilation Requirements – Mechanical ventilation (dilution or local exhaust), process or personnel enclosure and control of process conditions must be provided in accordance with all fire codes and regulatory requirements. Supply sufficient replacement air to make up for air removed by exhaust systems.
Other – Emergency shower and eyewash must be available and tested in accordance with regulations and be in close proximity.
Individual Protection Measures:

Hand protection – Wear protective gloves.
Eye protection – Chemical goggles or safety glasses.
Respiratory protection – Respiratory protection not required in normal conditions.
Other information – Do not eat, drink or smoke during use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Color	Colorless
Odor	Mild Odor
Odor Threshold	Not Available
Melting Point/Freezing Point	-1.58^{0}C (29.2^{0}F)
Initial Boiling Point	100^{0}C
Flash Point	Not Applicable
Evaporation Rate	Not Available
Flammability	Non-flammable
Upper Flammable Limit	Not Applicable
Lower Flammable Limit	Not Applicable
Vapor Pressure (mm Hg, 20^{0}C)	Not Available
Vapor Density (Air=1)	2.07
Relative Density	Not Available
Solubility	Miscible with water, alcohol, glycerol, ether, carbon tetrachloride. Practically insoluble in carbon disulfide.
Decomposition Temperature	Not Available
Viscosity	1.11 mPa.s
Explosive Properties	None
% Volatiles by Volume	100

10. STABILITY AND REACTIVITY

Chemical stability: Normally stable.
Possibility of Hazardous Reactions: None known.
Conditions to Avoid: Temperatures above 100^{0}C (boiling point of water). Direct Sunlight.
Incompatible Materials: Strong oxidizing agents, pentafluoride, chlorine trifluoride, phosphorus trichloride, p-xylene, strong alkalis or caustics, phosphorous isocyanate, potassium tert-butoxide, ammonium nitrate, most common metals, ammonium thiosulfate, acetaldehyde, 2-amineothanol, chlorosuflonic acid, ethylene diamine, theyleneimine, oleum.
Hazardous Decomposition Products: During a fire, toxic carbon monoxide, carbon dioxide and other irritant gases and vapor, which may include unburned acid and toxic constituents, may be generated.

11. TOXICOLOGICAL INFORMATION

Likely routes of exposure: Skin and eye contact.

Acute Toxicity

Component	Oral LD_{50}	Dermal LD_{50}	LC_{50}
Acetic Acid (7%)	24 g/kg (rabbit)	21.2 g/kg (rabbit)	228 mg/L (rat, 4hr)
Citric Acid	5400 mg/kg (rat)		

Skin Corrosion/ Irritation	Mild skin irritant.
Ingestion	Mildly irritating to the mouth, throat and gastrointestinal tract.
Inhalation	May cause irritation of the nose and throat, shortness of breath, cough, wheezing and reversible lung injury.
Serious Eye Damage/Irritation	Can cause severe eye irritation.
Respiratory or Skin Sensitization	May cause sensitization to skin contact. Acetic acid may cause occupational asthma.
Germ Cell Mutagenicity	Acetic Acid is not known to be a mutagen.
Reproductive Toxicity	Acetic acid is not known to cause reproductive toxicity.
STOT-Single Exposure	May cause respiratory irritation.
STOT-Repeated Exposure	Not Available.
Aspiration Hazard	Not Available.
Synergistic Materials	In animal studies, concurrent exposure to acetic acid and known carcinogens has increased the incidence of cancer caused by the known carcinogen. This effect is likely because of the cytotoxicity of acetic acid and its potential to cause increased cell proliferation (hyperplasia).

12. ECOLOGICAL INFORMATION

Ecotoxicity:

Component	Toxicity to Algae	Toxicity to Fish	Toxicity to Daphnia and other Aquatic Invertebrates
Acetic Acid	**EC_{50} (Green algae, 24 hr): 156mg/L**	**LC_{50} (Lepomis macrochirus, 96 hr): 75mg/L**	**LC_{50} (Daphnia magna, 24 hr): 47.0mg/L**
Citric Acid	**Not Available**	**LC_{50} fish1: 440 mg/L**	**EC_{50} Daphnia 1: 1534mg/L**

Biodegradability: Acetic Acid will biodegrade readily if released to water (i.e.: 5-day BOD's 63-81%) or soil. The atmospheric photochemical degradation half-life is estimated to be 26.7 days**.**
Bioaccumulation: An estimated BCF of 3.2 suggests the potential for bioconcentration in aquatic organisms is low. Acetic acid shows no potential for biological accumulation or food chain contamination.

Mobility in Soil: Acetic acid is not expected to be susceptible to direct photolysis by sunlight. If released to soil, acetic acid is expected to have very high to moderate mobility based upon Koc values ranging from 6.5 to 228.
Other Adverse Effects: The aquatic toxicity and biodegradation of acetic acid are expected to be influenced by its potential to lower pH.

13. DISPOSAL CONSIDERATIONS

Waste from Residues/ Unused Products: Dispose in accordance with all federal, state, and/or local regulations.
Contaminated Packaging: Dispose in accordance with all federal, state, and/or local regulations.

14. TRANSPORT INFORMATION

UN Number	Not Regulated
UN Proper Shipping Name	Not Regulated
Transport Hazard Class(es)	Not Regulated
Environmental Hazards	Not listed as a marine pollutant.

15. REGULATORY INFORMATION

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR 372.38(a) 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.

16. OTHER INFORMATION

Preparation Date: August 22, 2018
Prepared By: KRK Consulting, LLC
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Other: The information contained herein is given in good faith but no warranty, expressed or implied is made. Consult supplier if additional information or explanation is required.