MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Identification

Product Name:	Vinegar, concentrated
Synonyms:	40 - 100 grain vinegar
Chemical Name:	Vinegar
Chemical Family:	Carboxylic acid
CAS Number:	8028-52-2

Company Identification

Mizkan Americas, Inc.
1661 Feehanville Dr., Suite 300
Mount Prospect, IL 60056
(847) 590 –0059
Contact Name: Zia Mir, VP of Technical Services (Phone Extension x1331)

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2. COMPOSITIONIIINFORMATION ON INGREDIENTS

Chemical Name	Amount	CAS Number
ACETIC ACID	4.0-10.0%	64-19-7

(See Section 8 for exposure guidelines)

(See Section 15 for regulatory information)

HAZARDS DISCLOSURE

This product contains hazardous materials as defined by the OSHA Hazard Communication Standard 29 CFR 1910.1200.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

CAUTION

Eye irritant. Prolonged or excessive inhalation may cause respiratory tract irritation.

(section 3 continued)

POTENTIAL HEALTH EFFECTS

EYE:
Irritating to the eyes.

INHALATION:
Prolonged or excessive inhalation may cause respiratory tract irritation.

INGESTION:
No hazard in normal use.

CARCINOGENICITY INFORMATION:
No known cancer hazards.

REPRODUCTIVE HAZARDS:
Not a reproductive hazard.

4. FIRST AID MEASURES

EYE CONTACT FIRST AID:
Immediately flush eyes with plenty of water.

INHALATION FIRST AID:
If exposed to excessive levels of fumes, remove to fresh air.

INGESTION FIRST AID:
If swallowed in large amounts, water should be consumed to dilute. Do not induce vomiting. Do not give emetics or baking soda.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES
Flash Point: Not Applicable - no flash when sample of 100-grain white distilled vinegar tested in tag closed cup tester.

FLAMMABLE LIMITS IN AIR
LEL: Not Applicable
UEL: Not Applicable

EXTINGUISHING MEDIA:
Will not burn

FIRE & EXPLOSION HAZARDS:
Material will not burn.

6. ACCIDENTAL RELEASE MEASURES

SAFEGUARDS (PERSONNEL):
Protect eyes from exposure. Avoid breathing vapor.

INITIAL CONTAINMENT:
Water may be used to dilute. Treat or dispose of waste material as a weak acid in accordance with all local, state/provincial, and national requirements.

LARGE SPILLS PROCEDURE:
Water may be used to dilute. Treat or dispose of waste material in accordance with all local, state/provincial, and national requirements.

SMALL SPILLS PROCEDURE:
Water may be used to dilute. Treat or dispose of waste material as a weak acid in accordance with all local, state/provincial, and national requirements.

7. HANDLING AND STORAGE

HANDLING (PERSONNEL):
Avoid breathing vapor. Avoid contact with eyes.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS:
Good general ventilation should be sufficient to control airborne levels.

EYE / FACE PROTECTION REQUIREMENTS:
Where contact with this material is likely, eye protection is recommended.

SKIN PROTECTION REQUIREMENTS:
None needed for proper use in accordance with label directions.

RESPIRATORY PROTECTION REQUIREMENTS:
Under normal use conditions, with adequate ventilation. no special handling equipment is required.

(section 8 continued)

EXPOSURE GUIDELINES:

Note, these values refer to the acetic acid content

OSHA Permissible Exposure Limit (PEL)…….10 ppm acetic acid (25 mg/m^3)
(The PEL is the official OSHA occupational exposure standard, and is an 8-hour time-Weighted average (TWA))

ACGIH Threshold Limit Value (TLV)……...10 ppm acetic acid (25 mg/m^3)
(The TLV is the 8-hour TWA occupational exposure guidance level recommended by The American Conference of Governmental Industrial Hygienists)

ACGIH Short-tenn Exposure Limit (STEL)……15 ppm acetic acid (37 mg/m^3)
(The STEL is a level that can be permitted for up to 15 *minutes, up to 4-times per day, Provided the overall workshift average does not exceed the TLV-TWA)*

Recommended Exposure Limit (REL)…… l0 ppm acetic acid (25 mg/m^3)
(The REL is the maximum exposure level recommended by the National Institute for Occupational Safety and Health)

Immediately Dangerous to Life or Health (lDLH) Level..50 ppm acetic acid (125 mg/m^3)
(The IDLH is the maximum concentration in air from which one could escape within 30 minutes without escape-impairing symptoms or irreversible health effects)
Skin Designation……...No
Odor Threshold…….0.037-0.15 ppm acetic acid

9. PHYSICAL AND CHEMICAL PROPERTIES

FORM……	Liquid
COLOR…….....	Appropriate color for type of vinegar
ODOR……	Appropriate odor for type of vinegar
BOILING POINT……..	214°F @ 760 mm Hg at 10% acetic acid (calculated)
VAPOR PRESSURE…….	16.9 mm Hg@ 68°F at 10% acetic acid (calculated)
SOLUBILITY IN WATER……...	Complete
SPECIFIC GRAVITY……...	1.01 at 10% acetic acid (Water = 1)
MELTING/FREEZING POINT……	~ 26°F at 10% acetic acid (calculated)
PH……..	2.3 at 10% acetic acid (calculated)
% VOLATILES…….	100 %

10. STABILITY AND REACTIVITY

STABILITY:
Stable.

POLYMERIZATION:
Product will not undergo polymerization.

(section 10 continued)

INCOMPATIBILITY WITH OTHER MATERIALS:
Avoid contact with strong oxidizing agents. Avoid contact with strong bases.

DECOMPOSITION:
Decomposition will not occur if handled and stored properly.

11. TOXICOLOGICAL INFORMATION

MISCELLANEOUS:
No toxic effects are likely (other than eye irritation from direct contact, or respiratory irritation from excessive exposure to vapor).

12. ECOLOGICAL INFORMATION

Biodegrades readily under aerobic and anaerobic conditions. No tendency to bioaccumulate.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL:
Treat or dispose of waste material as a weak acid in accordance with all local, state/provincial, and national requirements.

14. TRANSPORTATION INFORMATION

PRODUCT LABEL…….	Vinegar
DOT SHIPPING NAME…….	Not Applicable
TECHNICAL SHIPPING NAME……....	Not Applicable
DOT HAZARD CLASS……..	Not Applicable
UN NUMBER……..	Not Applicable
PRODUCT RQ (lbs)……	Quantity containing the equivalent of 5,000 lb of 100% acetic acid, (e.g.,50,000 lb of vinegar containing 10% acetic acid)
DOT LABEL……...	Not Applicable

15. REGULATORY INFORMATION

Canadian Disclosure List
acetic acid (64-19-7)

CERCLA Hazardous Substances
acetic acid (64-19-7) -- RQ = quantity containing 5,000 lb of 100% acetic acid; (e.g., 50,000 lb of 10% acetic acid)

(section 15 continued)

FDA (FOOD AND DRUG ADMINISTRATION):
Material is a GRAS (Generally Recognized as Safe) food ingredient.

16. OTHER INFORMATION

The information in the MSDS related to this specific material. It is the user's responsibility to evaluate the applicability of this information for their particular conditions of storage, handling, and use.