

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	Zinc Acetate Dihydrate (DZA)
Chemical Formula	$(\text{CH}_3\text{COO})_2\text{Zn} \cdot 2\text{H}_2\text{O}$ or $\text{C}_4\text{H}_6\text{O}_4\text{Zn} \cdot 2\text{H}_2\text{O}$
Molecular Weight	219.51 g/mol
CAS No.	5970-45-6
EC No.	209-170-2
Supplier Address*	ISOFLEX USA P.O. Box 472615 San Francisco, CA 94147 United States
Telephone	+1 415-440-4433
Fax	+1 415-563-4433
Emergency Phone Number (both supplier and manufacturer)	Infotrac / +1 800-535-5053
Email	iusa@isoflex.com
Website	www.isoflex.com
Preparation Information	ISOFLEX USA Product Safety +1 415-440-4433

*May include subsidiaries or affiliate companies/divisions

2. HAZARDS IDENTIFICATION**Classification of the Substance or Mixture**

GHS07

Acute Toxicity 4 H302 Harmful if swallowed

Classification according to Directive 67/548/EEC or Directive 1999/45/EC

Harmful

Harmful if swallowed



Dangerous for the environment

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Information concerning particular hazards for human and environment: Not applicable**Label elements****Labelling according to EU guidelines:**

The product has been classified and marked in accordance with directives on hazardous materials.

Code letter and hazard designation of product:



Harmful

Dangerous for the environment

Risk phrases:

Harmful if swallowed

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Safety phrases:

Avoid contact with skin and eyes.

Avoid release to the environment. Refer to special instructions/safety data sheets.

NFPA Ratings: (0 = Minimal; 1 = Slight; 2 = Moderate; 3 = Serious; 4 = Severe)

Health Hazard = 2 Flammability = 0 Reactivity = 0



HMIS Ratings: (0 = Minimal; 1 = Slight; 2 = Moderate; 3 = Serious; 4 = Severe)

Health Hazard = 2 Flammability = 0 Physical Hazard = 0

HEALTH HAZARD	2
FLAMMABILITY	0
PHYSICAL HAZARD	0

Other Hazards:

Results of PBT and vPvB assessment: Not applicable

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name: Zinc Acetate Dihydrate
CAS No.: 5970-45-6
EC No.: 209-170-2
Chemical Formula: $(\text{CH}_3\text{COO})_2 \text{Zn} \cdot 2\text{H}_2\text{O}$ or $\text{C}_4\text{H}_6\text{O}_4\text{Zn} \cdot 2\text{H}_2\text{O}$
Molecular Weight: 219.51 g/mol

4. FIRST AID MEASURES

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

Inhalation

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

Dermal Exposure

Wash off with soap and plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Consult a physician.

Eye Exposure

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

Ingestion

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES

<i>Conditions of Flammability</i>	Not flammable or combustible
<i>Suitable Extinguishing Media</i>	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
<i>Special Protective Equipment for Firefighters</i>	Wear self-contained breathing apparatus for firefighting if necessary.
<i>Additional information</i>	Dispose of fire debris and contaminated firefighting water in accordance with official regulations.

6. ACCIDENTAL RELEASE MEASURES

<i>Personal Precautions</i>	Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist, dust or gas. Ensure adequate ventilation.
<i>Environmental Precautions</i>	Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
<i>Methods and Materials for Containment and Cleaning Up</i>	Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.
Reference to other sections	See Section 7 for information on safe handling. See Section 8 for information on personal protection equipment. See Section 13 for disposal information.

7. HANDLING AND STORAGE

<i>Handling</i>	Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.
<i>Storage</i>	Keep container tightly closed in a dry and well-ventilated place. Keep in a dry place. Recommended storage temperature: 15-25 °C. Storage class: 10-13.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values

Personal protective equipment

Respiratory protection

For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher-level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection



Wear appropriate protective gloves to prevent skin exposure. Glove material must be impermeable and resistant to the product/substance/preparation. Select the glove material with consideration of penetration times, rates of diffusion and degradation. The exact breakthrough time must be determined by the manufacturer of the protective gloves and must be observed by the user. Selection of suitable gloves depends not only on the material, but also on further marks of quality, and varies from manufacturer to manufacturer.

For full contact, gloves made with the following specifications are suitable:

Nitrile rubber, NBR

Recommended thickness of the material: ≥ 0.11 mm

Value for the permeation: Level ≥ 480 minutes

For splash contact, gloves made with the following specifications are suitable:

Nitrile rubber, NBR
Recommended thickness of the material: ≥ 0.11 mm
Value for the permeation: Level ≥ 480 minutes

<i>Eye protection</i>	Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
<i>Skin and body protection</i>	Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
<i>Hygiene measures</i>	Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	Powder
Color	White

Safety Data

pH	6.0 - 8.0 at 50 g/l at 25 °C (77 °F)
Melting point/freezing point	Melting point/range: 237 °C (459 °F)
Boiling point	No data available
Flash point	No data available
Flammability (solid, gaseous)	Product is not flammable
Ignition temperature	No data available
Auto-ignition temperature	No data available
Lower explosion limit	No data available
Upper explosion limit	No data available
Vapor pressure	No data available
Density at 20 °C (68 °F)	1.840 g/cm ³ (15.355 lb/gal)
Bulk density at 20 °C (68 °F)	~900 kg/m ³
Relative density	No data available
Vapor density	No data available
Evaporation rate	No data available
Solubility in/miscibility with water at 20 °C (68 °F)	430 g/l
Partition coefficient/n-octanol/water	No data available
Relative vapor density	No data available
Odor	No data available
Odor threshold	No data available
Evaporation rate	No data available

10. STABILITY AND REACTIVITY

<i>Chemical Stability</i>	Stable under recommended storage conditions
<i>Possibility of Hazardous Reactions</i>	No data available
<i>Conditions to Avoid</i>	No data available
<i>Materials to Avoid</i>	Oxidizing agents
<i>Hazardous Decomposition Products</i>	Hazardous decomposition products formed under fire conditions – Carbon oxides, zinc/zinc oxides.
<i>Other decomposition products</i>	No data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

<i>Oral LD50</i>	LD50 Oral - Rat - 794 mg/kg
Remarks: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste): Eye: Miosis (pupillary constriction). Vascular: BP elevation not characterized in autonomic section. Nutritional and Gross Metabolic: Weight loss or decreased weight gain.	
<i>Inhalation LC50</i>	No data available
<i>Dermal LD50</i>	No data available
<i>Other information on acute toxicity</i>	No data available
<i>Skin corrosion/irritation</i>	Mild skin irritation - 24 h
<i>Serious eye damage/eye Irritation</i>	Moderate eye irritation - 24 h
<i>Respiratory or skin Sensitization</i>	Irritant to skin and mucous membranes
<i>Germ cell mutagenicity</i>	Genotoxicity in vitro - Human - lymphocyte Cytogenetic analysis

Carcinogenicity

IARC	No component of this product present at levels greater than or equal to 0.1% is identified as a probable, possible or confirmed human carcinogen by IARC.
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
<i>Reproductive toxicity</i>	No data available
<i>Teratogenicity</i>	No data available
<i>Specific target organ toxicity - single exposure (Globally Harmonized System)</i>	No data available
<i>Specific target organ toxicity - repeated exposure (Globally Harmonized System)</i>	No data available

Potential Health Effects

<i>Ingestion</i>	Harmful if swallowed
<i>Signs and Symptoms Exposure</i>	To the best of our knowledge, the chemical, physical, and toxicological of properties have not been thoroughly investigated.
<i>Additional information</i>	RTECS: ZG8750000

12. ECOLOGICAL INFORMATION

<i>Toxicity</i>	No data available
<i>Persistence and degradability</i>	No data available
<i>Bioaccumulative potential</i>	No data available
<i>Mobility in soil</i>	No data available
<i>Ecotoxicological effects</i>	Very toxic for fish Water hazard class 3 (self-assessment); extremely hazardous for water. Poisonous for fish and plankton in bodies of water. Do not allow to enter bodies of water, waste water or soil. Very toxic for aquatic organisms.
<i>PBT and vPvB assessment:</i>	No data available
<i>Other adverse effects:</i>	No data available

13. DISPOSAL CONSIDERATIONS

<i>Product</i>	Do not allow product to reach sewage system. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.
<i>Contaminated packaging</i>	Disposal must be made according to official regulations. Dispose of contaminated packaging in the same manner as the product.

14. TRANSPORT INFORMATION

UN No. (DOT, ADR, IMDG, IATA)	UN3077
UN proper shipping name	
DOT, IMDG, IATA	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc Acetate Dihydrate)
ADR	3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc Acetate Dihydrate)

Transport hazard class(es)

DOT, Not dangerous goods
Proper Shipping Name None
Non--Hazardous for Transport This substance is considered non--hazardous for transport.

IMDG Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc Acetate Dihydrate)
UN No.: 3077
Class: 9
Packing Group: III
EMS No.: F--A, S--F



ADR Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc Acetate Dihydrate)

UN No.: 3077
Class: 9
Packing Group: III
Labels 9 + "Fish and Tree"
Hazardous ID No. 90
Special Provisions 274, 335, 375, 601
Tunnel Code E



IATA

Proper Shipping Name: Environmentally hazardous substance, solid, n.o.s. (Zinc Acetate Dihydrate)
UN No.: 3077
Class: 9
Packing Group: III
Labels 9 + "Fish and Tree"
Special Provisions A97, A158, A179, A197



Relevant IATA Special Provision: A197, as defined below;

"These substances when transported in single or combination packaging containing a net quantity per single or inner packaging of 5 L or less for liquids or having a net weight per single or inner packaging of 5 kg or less for solids, are not subject to any other provisions of these Regulations provided the packaging meet general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.

Environmental Hazards

Marine Pollutant:

Special Marking (ADR, IATA)



Special precautions for user Warning: Miscellaneous dangerous substances and articles



Danger code (Kemler) 90

EMS No. F-A,S-F

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable

UN "Model Regulation" UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc Acetate Dihydrate), 9, III

15. REGULATORY INFORMATION

OSHA Hazards	Harmful by ingestion, irritant
SARA 302 Components	No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302
SARA 313 Components	The following components are subject to reporting levels established by SARA Title III, Section 313: Zinc di(acetate) / CAS No. 5970-45-6 / Revision Date 1993-04-24.
SARA 311/312 Hazards	Acute Health Hazard
Massachusetts Right to Know Components	Zinc di(acetate) / CAS No. 5970-45-6 / Revision Date 1993-04-24
Pennsylvania Right to Know Components	Zinc di(acetate) / CAS No. 5970-45-6 / Revision Date 1993-04-24

New Jersey Right To Know Components

Zinc di(acetate) / CAS No. 5970-45-6 / Revision Date 1993-04-24

California Prop. 65 Components

This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Prepared by ISOFLEX USA
P.O. Box 472615
San Francisco, CA 94147
United States

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Prepared By ISOFLEX USA
Revision Note Update supplier address

ISOFLEX USA's Commonly Used Abbreviations and Acronyms*

ACGIH	American Conference of Governmental Industrial Hygienists
ADR	European Agreement Concerning the International Carriage of Dangerous Goods by Road
ALARA	As Low As Is Reasonably Achievable
AMU	Atomic Mass Unit
ANSI	American National Standards Institute
BLS	Basic Life Support
CAM	Continuous Air Monitor
CAS	Chemical Abstracts Service (division of the American Chemical Society)
CEN	European Committee for Standardization
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CLP	Classification, Labelling and Packaging (European Union)
CPR	Controlled Products Regulations (Canada)
CWA	Clean Water Act (USA)
DAC	Derived Air Concentration (USA)
DOE	United States Department of Energy (USA)
DOT	United States Department of Transportation (USA)
DSL	Domestic Substances List (Canada)
EC50	Half Maximal Effective Concentration
EINECS	European Inventory of Existing Commercial Chemical Substances
EHS	Environmentally Hazardous Substance
ELINCS	European List of Notified Chemical Substances
EMS	Emergency Response Procedures for Ships Carrying Dangerous Goods
EPA	Environmental Protection Agency (USA)
EPCRA	Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986
GHS	Globally Harmonized System
HMIS	Hazardous Materials Identification System (USA)
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IBC	Intermediate Bulk Containers
ICAO	International Civil Aviation Organization
IDLH	Immediately Dangerous to Life or Health
IMDG	International Maritime Code for Dangerous Goods
LC50	Lethal concentration, 50 percent
LD50	Lethal dose, 50 percent
LDLO	Lethal Dose Low
LOEC	Lowest-Observed-Effective Concentration
MARPOL	International Convention for the Prevention of Pollution from Ships
MSHA	Mine Safety and Health Administration (USA)

NCRP	National Council on Radiation Protection & Measurements (USA)
NDSL	Non-Domestic Substances List (Canada)
NFPA	National Fire Protection Association (USA)
NIOSH	National Institute for Occupational Safety and Health (USA)
NOEC	No Observed Effect Concentration
N.O.S.	Not Otherwise Specified
NRC	Nuclear Regulatory Commission (USA)
NTP	National Toxicology Program (USA)
OSHA	Occupational Safety and Health Administration (USA)
PBT	Persistent Bioaccumulative and Toxic Chemical
PEL	Permissible Exposure Limit
PIH	Poisonous by Inhalation Hazard
RCRA	Resource Conservation and Recovery Act (USA)
RCT	Radiation Control Technician
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals (Europe)
RID	Regulations Concerning the International Transport of Dangerous Goods by Rail
RTECS	Registry of Toxic Effects of Chemical Substances
SARA	Superfund Amendments and Reauthorization Act (USA)
TDG	Transportation of Dangerous Goods (Canada)
TIH	Toxic by Inhalation Hazard
TLV	Threshold Limit Value
TPQ	Threshold Planning Quantity
TSCA	Toxic Substances Control Act
TWA	Time Weighted Average
UN	United Nations (Number)
VOC	Volatile Organic Compound
vPvB	Very Persistent Very Bioaccumulative Chemical
WGK	Wassergefährdungsklassen (Germany: Water Hazard Classes)
WHMIS	Workplace Hazardous Materials Information System

*One or more of the above-listed items may not appear in this document.

General Disclaimer

For terms and conditions, including limitation of liability, please refer to the purchase agreement in effect between ISOFLEX USA (or any of its affiliates and subsidiaries) and the purchaser.

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