SAFETY DATA SHEET
WHITE-OX CRYSTALS

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifier

Product Name: WHITE-OX Crystals

Product Codes(s): WOC1, WOC4, WOC35

Synonyms: Ethanedioic acid dihydrate, Oxalic acid dihydrate

REACH Registration Number: No data available

1.2 Relevant identified uses of the substance or mixture and uses advised against

General Use: Rust remover

Uses advised against: No uses advised against

1.3 Details of the supplier and of the safety data sheet

Manufacturer/Distributor

Pharmco Laboratories, Inc.
3520 South Street
Titusville, FL 32780 USA
+1-800-635-0712

1.4 Emergency telephone number

INFOTRAC: +1-800-535-5053 for the USA and Canada
Outside the USA or Canada: +1-352-323-3500

SECTION 2 - HAZARDS IDENTIFICATION

2.1 Classification of substance or mixture

Product definition: Substance

Classification in accordance with 29 CFR 1910 (OSHA HCS) and Regulation (EC) No 1272/2008

Acute Toxicity, Oral - Category 4 [H302]
Acute Toxicity, Dermal - Category 4 [H312]

2.2 Label Elements

Hazard Symbol(s):

GHS07

Signal Word: Warning

Hazard Statement(s):
H302 - Harmful if swallowed
H312 - Harmful in contact with skin.

Precautionary Statements:

[Prevention]
P264 - Wash hands and other skin areas exposed to material thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P280 - Wear protective gloves, protective clothing and eye protection.

[Response]
P301 + P330 + P312 - IF SWALLOWED: Rinse mouth. Call a POISON CENTER or doctor if you feel unwell.
P322 - Specific treatment: Contact a POISON CENTER or doctor for advice; refer to Section 4 of this SDS.
P363 - Wash contaminated clothing before reuse.

[Disposal]
P501 - Dispose of contents and container in accordance with local and national regulations.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

None identified

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

% by Weight	Ingredient	CAS Number	EC Number	Index Number	GHS Classification
>99	Oxalic Acid Dihydrate	6153-56-6	612-167-2	----------	H302, H312

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

3.2 Mixtures

Not applicable

SECTION 4 - FIRST AID MEASURES

4.1 Description of first aid measures

Inhalation: If product dust causes respiratory irritation or distress, move the exposed person to fresh air immediately. If breathing is difficult or irregular, administer oxygen; if respiratory arrest occurs, start artificial respiration by trained personnel. Loosen tight fitting clothing such as a collar, tie, belt or waistband. Seek medical attention if cough or other symptoms develop or persist.

Eyes: Immediately flush eyes with large amounts of water for 15 minutes, occasionally lifting the upper and lower lids. Remove contact lenses, if present and easy to do, after the first 2 minutes and continue rinsing. Seek immediate medical attention, preferably from an ophthalmologist.

Skin: Flush skin with large amounts of water while removing contaminated clothing and continue rinsing for at least 15 minutes. Wash contaminated clothing thoroughly before reuse. Discard contaminated shoes. If irritation persists, seek medical attention.

Ingestion: Rinse mouth with water if the victim is conscious. Remove dentures, if present. Give 1 - 2 cupfuls of water or milk to drink if the victim is conscious, alert and able to swallow. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious or convulsing person. Do not leave the victim unattended. Obtain immediate medical attention.

4.2 Most important symptoms and effects, both acute and delayed

Potential health symptoms and effects

Eyes: Causes serious eye irritation. Symptoms may include redness, swelling, pain, tearing, possible tissue burns and corneal injury.

Skin: Harmful if absorbed through the skin. Causes skin irritation with redness, itching, swelling and possible blistering, skin lesions and burns. Skin lesions begin with epithelial cracking and the formation of slow-healing ulcers. The fingers may appear cyanotic. May cause dermatitis.

Inhalation: Causes irritation of the respiratory system and ulceration of the mucous membranes. Symptoms include cough, sore throat, headache, vomiting, nervousness. Additional symptoms may include emaciation, back pain (due to kidney injury) and weakness.

Ingestion: Harmful if swallowed. Causes severe irritation and burns to the gastrointestinal tract. Causes ulcerations of the mouth, vomiting blood, rapid appearance of shock, convulsions, twitching, tetany and cardiovascular collapse. Systemic effects may be due to the formation of calcium oxalate, which is insoluble at physiological pH and can be deposited in the brain and kidney tubules. Resultant hypocalcemia might disturb the function of the heart and nerves. Oxalic acid is toxic because of its acidic and chelating properties. As little as 5 grams (71 mg/kg) may be fatal.

Chronic: Prolonged and repeated inhalation of oxalic acid dust or mist may result in weight loss, respiratory tract inflammation and urolithiasis. Prolonged and repeated skin contact may cause dermatitis.

4.3 Indication of any immediate medical attention and special treatment needed

Advice to Doctor and Hospital Personnel: Treat symptomatically and supportively. Intravenous administration of calcium gluconate or calcium chloride may be required if hypocalcemia or hypocalcemic tetany occurs.

SECTION 5 - FIRE FIGHTING MEASURES

5.1 Extinguishable media

Suitable methods of extinction: Non-combustible. Use extinguishing media suitable for surrounding material.

Unsuitable methods of extinction: None known

5.2 Special hazards arising from the substance or mixture

Closed containers may explode due to the buildup of pressure when exposed to extreme heat. During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent or may be delayed. Obtain medical attention.

Explosion hazards: Not considered to be explosion hazard.

5.3 Advice for firefighters

Full protective equipment including self-contained breathing apparatus should be used. Water may be used to cool closed containers to prevent pressure buildup and possible autoignition or explosion when exposed to extreme heat. Water contaminated by this material must be contained from being discharged to any waterway, sewer or drain to prevent environmental contamination.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Evacuate non-essential personnel. Wear appropriate protective clothing designated in Section 8. Avoid dust generation and accumulation. Do not inhale dust. Ventilate the area. Remove all sources of ignition. No smoking.

6.2 Environmental precautions

Avoid dispersal of spilled material or runoff and prevent contact with soil and entry into drains, sewers or waterways.

6.3 Methods and materials for containment and cleaning up

Cover drains and contain spill. Do not flush the spill down the drain. Collect material and place into an approved container for proper disposal. Observe possible material restrictions (Sections 7.2 and 10.5). Dispose of waste via a licensed waste disposal contractor.

6.4 Reference to other sections

See Section 13 for additional waste treatment information.

SECTION 7 - HANDLING AND STORAGE

7.1 Precautions for safe handling

Wear all appropriate personal protective equipment specified in Section 8. Do not get in eyes or on skin or clothing. Do not breathe dust. No smoking. If normal use of material presents a respiratory hazard, use only adequate ventilation or wear an appropriate respirator.

Advice on protection against fire and explosion

Material does not present a fire or explosion hazard.

7.2 Conditions for safe storage, including any incompatibilities

Store in a dry, cool, well-ventilated area away from incompatible materials (see Section 10.5), food and drink. Transfer only to approved containers having correct labeling. Very hygroscopic material. Keep container tightly closed to prevent moisture absorption. Protect container against physical damage. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Containers of this material are hazardous when empty since they retain product residues. Use appropriate containment to avoid environmental contamination. Ventilate closed areas. Do not take internally. Keep out of reach of children.

7.3 Specific end uses

Apart from the uses mentioned in Section 1.2, no other specific uses are stipulated.

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Occupational exposure limits

CAS Number	Ingredient	OSHA PEL	ACGIH TLV	NIOSH
6153-56-6	Oxalic Acid Dihydrate	1 mg/m ^{3} TWA	1 mg/m^3 TWA; 2 mg/m^3 STEL	1 mg/m^3 TWA; 500 mg/m^3 IDLH

8.2 Exposure controls

Engineering Measures: Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. Use adequate ventilation. Local exhaust is preferable. Refer to Section 7.1 for additional data.

Individual protection measures: Wear protective clothing to prevent repeated or prolonged contact with product. Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the representative supplier.

Hygiene measures: Facilities storing or using this material should be equipped with an eyewash station and safety shower. Change contaminated clothing. Preventive skin protection is recommended. Wash hands thoroughly after use, before eating, drinking, smoking or using the lavatory.

Eye/face protection: Wear protective goggles or safety glasses with non-perforated side shields. Refer to 29 CFR 1910.133, ANSI Z87.4 or Standard EN 166.

Hand Protection: Wear gloves recommended by glove supplier for protection against materials in Section 3. Gloves should be impermeable to chemicals and oil. Breakthrough time of gloves must be greater than the intended use period.

Other protective equipment: Wear protective clothing. Wear protective boots if the situation requires.

Respiratory Protection: Wear an approved filter type dust respirator when handling this product. Where risk assessment shows air-purifying respirators are appropriate use a full-faced respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Follow OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149.

Environmental exposure controls: Do not empty into drains.

PPE must not be considered a long-term solution to exposure control. PPE usage must be accompanied by employer programs to properly select, maintain, clean fit and use. Consult a competent industrial hygiene resource to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	White granules or powder
Odor	Odorless
Odor Threshold	No data available
Molecular Weight	126.065 g/mol
Chemical Formula	$C_2H_2O_4 \cdot 2H_2O$
pH	1 (10% aqueous solution @ 20 °C)
Freezing/Melting Point, Range	101.7 °C (215 °F)
Initial Boiling Point	148.9 °C (300 °F)
Evaporation Rate	No data available
Flammability (solid, gas)	Non-flammable
Flash Point	No data available
Autoignition Temperature	No data available
Decomposition Temperature	>157 °C (>315 °F)
Lower Explosive Limit (LEL)	No data available
Upper Explosive Limit (UEL)	No data available
Vapor Pressure	0.01 mm Hg @ 20 °C
Vapor Density	4.62 (Air = 1)
Specific Gravity	1.653 @ 20 °C
Viscosity	No data available
Solubility in Water	143 g/l
Partition Coefficient: n-octanol/water	log Kow = -0.81 @ 30 °C
Oxidizing Properties	Not applicable
Explosive Properties	Not applicable
Volatiles by Weight @ 21 ºF	0%

9.2 Other data

No data available

SECTION 10 - STABILITY AND REACTIVITY

10.1 Reactivity

No special reactivity has been reported.

10.2 Chemical stability

This product is stable under recommended storage conditions, handling and use. Material is hygroscopic (absorbs moisture from the air).

10.3 Possibility of hazardous reactions

Hazardous polymerization does not occur.

10.4 Conditions to avoid

High temperatures; hot surfaces; contact with incompatible materials; dust generation and accumulation; exposure to moist air or water

10.5 Incompatible materials

Strong oxidizing agents, strong alkalis and bases, mercury, silver, ammonia, hypochlorites, chlorites, furfuryl alcohol, salts of oxyhalogenic acids

10.6 Hazardous decomposition products

Thermal decomposition products include oxides of carbon, formic acid.

SECTION 11 - TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute Oral Toxicity

LD_{50}, rat: 375 mg/kg (anhydrous)

LD_{50}, human: 50 - 500 mg/kg (anhydrous)

Acute inhalation toxicity

No data available

Acute dermal toxicity

LD_{50}, rabbit: 20 mg/kg (anhydrous)

Skin irritation/corrosion

Causes skin irritation

Eye irritation/corrosion

Causes serious eye irritation; may cause corneal damage

Sensitization

No data available

Genotoxicity in vitro & in vivo

No data available

Mutagenicity

No data available

Specific organ toxicity - single exposure

No data available

Specific organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

11.2 Further information

Oxalic acid caused kidney damage in fetal sheep and rats, and disturbed the estrus cycle in rats. Increased sperm abnormalities were seen in the second generation of mice administered 0.2% oxalic acid in drinking water.

No component of this product present at levels greater than or equal to the 0.1% threshold (de minimis) is identified as a probable, possible, potential or confirmed carcinogen by ACGIH, IARC, NTP or OSHA. No data is available regarding the mutagenicity or teratogenicity of this product, nor is there any available data that indicates that it causes adverse developmental or fertility effects.

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12 - ECOLOGICAL INFORMATION

12.1 Toxicity

Acute and prolonged toxicity to fish: LC_{50} - Leuciscus idus (Golden orfe), 48 h: 160 mg/l

Acute toxicity to aquatic invertebrates: EC_{50} - Daphnia magna (Water flea), 48 h: 137 mg/l

12.2 Persistence and degradability

This material is expected to biodegrade.

12.3 Bioaccumulation potential

This material will not bioaccumulate.

12.4 Mobility in soil

This product has high mobility in soil.

12.5 Results of PBT and vPvB assessment

No data available

12.6 Other adverse effects

Additional ecological information

Do not allow material to run into surface waters, wastewater or soil.

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

SECTION 13 - DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

The generation of waste should be avoided or minimized whenever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal

contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilt material and runoff, and contact with soil, drains, sewers and waterways.

RCRA P-Series: No listing
RCRA U-Series: No listing

SECTION 14 - TRANSPORT INFORMATION

Note: Transportation information provided is for reference only. Customer is urged to consult 49 CFR 100 - 177, IMDG, IATA, EC, United Nations TDG and WHMIS (Canada) TDG information manuals for detailed regulations and exceptions covering specific container sizes, packaging materials and methods of shipping.

NOT REGULATED FOR TRANSPORT

SECTION 15 - REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for substance or mixture

U. S. Federal Regulations

OSHA Hazard Communication Standard: This material is classified as hazardous in accordance with OSHA 29 CRF 1910.1200.

OSHA Process Safety Management Standard: This substance is not regulated under OSHA PSM Standard 29 CFR 1910.119.

EPA Risk Management Planning Standard: This substance is not regulated under EPA RMP Standard (RMP) 40 CFR Part 68.

EPA Federal Insecticide, Fungicide and Rodenticide Act: This substance is not a registered Pesticide under the FIFRA, 40 CFR Part 150.

Toxic Substance Control Act (TSCA) Inventory: Oxalic Acid Dihydrate (CAS #6153-56-6) is not listed on the TSCA Inventory. It is a hydrate and exempt from TSCA Inventory requirements. Oxalic Acid Anhydrous (CAS #144-62-7) is listed. This product is not subject to TSCA 12(b) Export Notification.

Drug Enforcement Administration (DEA) List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.4(f)(2) and Chemical Code Number
Not listed

Drug Enforcement Administration (DEA) Lists 1 & 2, Exempt Chemical Mixtures (21 CFR 1310.12(c)) and Code Number
Not listed

Department of Homeland Security (DHS) Chemical Facility Anti-Terrorism Standards (CFATS) Chemicals
Not listed

Superfund Amendments and Reauthorization Act (SARA)

SARA 313 Information: This substance is not subject to reporting requirements of Section 313 of the Emergency Planning and Community Right-to Know Act of 1986.

SARA Section 311/312 Hazard Categories: Acute Health Hazard, Chronic Health Hazard

SARA 302/304 Extremely Hazardous Substance: This substance is no subject to reporting requirements of these sections of Title III of SARA.

SARA 302/304 Emergency Planning & Notification: This substance is not subject to reporting requirements of these sections of Title III of SARA.

Comprehensive Response Compensation and Liability Act (CERCLA): This product contains no CERCLA reportable substance(s).

Clean Air Act (CAA)
This substance is not listed as a Hazardous Air Pollutant (HAP) designated in CAA Section 112 (b).
This substance is not a Class 1 Ozone depletor.
This substance is not a Class 2 Ozone depletor.

Clean Water Act (CWA)
This substance is not listed as a Hazardous Substance under the CWA.
This substance is not listed as a Priority Pollutant under the CWA.
This substance is not listed as aToxic Pollutant under the CWA.

U.S. State Regulations

California Prop 65, Safe Drinking Water and Toxic Enforcement Act of 1986:
This substance is not known to the State of California to cause cancer, birth defects or other reproductive harm.

Other U.S. State Inventories:
Oxalic Acid Anhydrous (CAS #144-62-7) is listed on any State Hazardous Substance Inventories, Right-to-Know lists and/or Air Quality/Air Pollutants list(s): CA, ID, ME, MA, NM, NJ, PA, RI, WA, WI.

Canada

WHMIS Hazard Symbol and Classification
Harmful if swallowed and in contact with skin

Canadian National Pollutant Release Inventory (NPRI): This substance is not listed on the NPRI.

European Economic Community

WGK, Germany (Water danger/protection): 1 (low hazard to waters)

Global Chemical Inventory Lists

Country	Inventory Name	Inventory Listing*
Canada	Domestic Substance List (DSL)	Yes
Canada	Non-Domestic Substance List (NDSL)	No
Europe	Inventory of New and Existing Chemicals (EINECS)	Yes
United States	Toxic Substance Control Act (TSCA)	Yes
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
New Zealand	New Zealand Inventory of Chemicals (NZIoC)	Yes

*Yes - All components of this product are in compliance with the inventory requirements administered by the governing country.
No - One or more components of this product are not on the inventory or are exempt from listing.

Global Chemical Inventory Lists (continued)

Country	Inventory Name	Inventory Listing*
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes

*Yes - All components of this product are in compliance with the inventory requirements administered by the governing country.
No - One or more components of this product are not on the inventory or are exempt from listing.

15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out.

SECTION 16 - OTHER INFORMATION

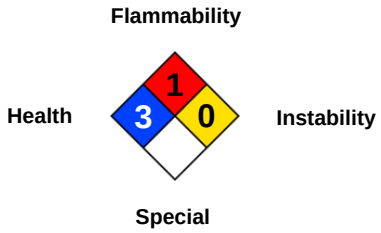
Hazardous Material Information System (HMIS)

C = safety glasses, gloves and an apron

HMIS Hazard Rating Legend
0 = Minimal 1 = Slight 2 = Moderate 3 = Serious
4 = Severe * = Chronic Health Hazard

NFPA Hazard Rating Legend
0 = Insignificant 1 = Slight 2 = Moderate
3 = High 4 = Extreme

National Fire Protection Association (NFPA)



Abbreviation Key

ACGIH	American Conference of Governmental Industrial Hygienists
ADR	Accord Dangereux Routier (European regulations concerning the international transport of dangerous goods by road)
CAS	Chemical Abstract Services
CFR	Code of Federal Regulations
DOT	Department of Transportation
EC_{50}	Half maximal effective concentration
EMS Guide	Emergency Response Procedures for Ships Carrying Dangerous Goods
EPA	Environmental Protection Agency
ErC_{50}	Reduction of Growth Rate
ERG	Emergency Response Guide Book
FDA	Food and Drug Administration
GHS	Globally Harmonized System of Classification and Labelling of Chemicals (GHS)
HCS	Hazard Communication Standard
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IC_{50}	Half Maximal Inhibitory Concentration
ICAO	International Civil Aviation Organization
IDLH	Immediately Dangerous to Life and Health
IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
LC_{50}	50% Lethal Concentration
LD_{50}	50% Lethal Dose
LD_{Lo}	Lowest Lethal Dose
mppcf	Millions of Particles Per Cubic Foot
NA	North America
NAERG	North American Emergency Response Guide Book
NIOSH	National Institute for Occupational Safety
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration
PBT	Persistent, Bioaccumulating and Toxic
PEL	Permissible exposure limit
PMCC	Pensky-Martens Closed Cup
ppm	Parts Per Million
RCRA	Resource Conservation and Recovery Act
RID	Dangerous Goods by Rail
RQ	Reportable Quantity
TCC/Tag	Tagliabue Closed Cup
TLV	Threshold Limit Value
TSCA	Toxic Substance Control Act
TWA	Time-weighted Average
UN	United Nations
VOC	Volatile Organic Compounds
vPvB	Very Persistent and Very Bioaccumulating
WHMIS	Workplace Hazardous Materials Information System

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