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## MATERIAL SAFETY DATA SHEET

### Section 1: PRODUCT AND COMPANY IDENTIFICATION

**Research Organics, Inc.**  
4353 East 49<sup>th</sup> Street  
Cleveland, Ohio 44125 USA

Company Phone Number: **1-800-321-0570**  
Monday-Friday, 8:00 a.m. – 4:30 p.m. EDT  
Telephone Numbers – 24 Hour Emergency Assistance  
INFOTRAC **1-800-535-5053 [USA]**  
**01-352-323-3500**

PRODUCT NAME: **OXALACETIC ACID**  
PART NUMBER: **RES05130**  
CAS NUMBER: 328-42-7  
SYNONYMS: 2-OXOSUCCINIC

ISSUE DATE: 05/26/06  
SUPERSEDES DATE: 04/25/06  
REVISION: B02

### Section 2: HAZARDS IDENTIFICATION

#### EMERGENCY OVERVIEW

Appearance/Odor: White to tan colored powder with no odor

#### **DANGER!**

**CORROSIVE – CORROSIVE TO SKIN, EYES, DIGESTIVE TRACT, AND RESPIRATORY TRACT**

**THE TOXICOLOGICAL PROPERTIES OF THIS MATERIAL HAVE NOT BEEN FULLY INVESTIGATED.**

Potential Health Effects: Some effects may be delayed.  
See Section 11 for more information.

Routes of Exposure: Eye contact, skin contact, inhalation and ingestion  
Eye: Corrosive. This material may cause severe irritation and possible eye burns with possible permanent injury or blindness.  
Skin: Corrosive. Exposure causes skin burns.  
Ingestion: Corrosive. If ingested, this material causes severe and permanent damage to the digestive tract. Causes gastrointestinal tract burns.  
Inhalation: Corrosive. This material causes burns to the respiratory tract. May cause coughing, wheezing, nausea, and vomiting.  
Medical Conditions Aggravated By Exposure: ND

Target Organs: Skin

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This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Potential Environmental Effects: See Section 12 for more information  
Not considered to have environmental effects to fish.

### Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS #	% by Wt.
Oxalacetic Acid	328-42-7	100%

### Section 4: FIRST AID MEASURES

- Eye Contact:** Flush immediately with large amounts of water for at least 20 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Do not allow victim to rub the affected eye(s). Get medical attention.
- Skin Contact:** Immediately flush skin with plenty of water, for at least 20 minutes, while removing contaminated clothing and shoes. Contaminated clothing must be laundered before reuse. Get medical attention.
- Inhalation:** Safety remove victim to fresh air. If not breathing, then institute artificial respiration/rescue breathing. If breathing is difficult, ensure clear airway and give oxygen. Get medical attention.
- Ingestion:** If swallowed, wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention.

Note to Physicians: Treat symptomatically and supportively.

### Section 5: FIRE FIGHTING MEASURES

Suitable Extinguishing Media: Water Spray, Dry Chemical, Alcohol or All-Purpose Foam or Carbon Dioxide.  
Use extinguisher media appropriate for surrounding fire.

Unsuitable Extinguishing Media: None known to manufacturer.

Production of Combustion: May produce CO and/or CO<sub>2</sub>.

Protection of Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, (MSHA/NIOSH approved or equivalent) and full protective gear. Evacuate the area and fight fire from a safe distance.

Unusual Fire and Explosion Hazards: None

### Section 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions: Use personal protection recommended in Section 8

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**Environmental Precautions:** Isolate hazard area and deny entry. Keep unnecessary people away. Do not flush to sewer. Avoid runoff into storm sewers and ditches which lead to waterways.

**Methods for Containment:** If product is released to the environment, take immediate steps to stop the release. Caution should be exercised regarding personnel safety and exposure to the released product. Vacuum or sweep up material and place in a disposal container.

**Methods for Clean-Up:** Clean up spills immediately under qualified supervision observing precautions in Protective Equipment section. Avoid clean up procedures that generate dust or result in water pollution. After removal, scrub the contaminated area with detergent and flush thoroughly with water. Absorb wash liquid and place in the disposable container.

**Other Information:** Notify local authorities, if required. Spills of this material do not need to be reported to the National Response Center.

### Section 7: HANDLING AND STORAGE

#### Handling

When handling this material, follow all personal protective measures described in Section 8. Avoid contact with skin, eyes and/or clothing. Avoid inhalation of dust material. Minimize dust generation during handling and contact. Wash thoroughly after handling and before eating, drinking, or smoking.

#### Storage

Store in Freezer in well ventilated area. Keep container closed when not in use. Product residue may remain in empty container. Observe all label precautions until container is cleaned, reconditioned or destroyed.

#### Storage Hazards

Store away from oxidizers, strong acids, and strong bases.

### Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Exposure Guidelines

##### Oxalacetic Acid

No Exposure limits established by OSHA or ACGIH  
ACGIH - Particulated Not Otherwise Classified (PNOC)  
Inhalable particulate (1989) TWA 10 mg/m<sup>3</sup>  
Respirable particulate (1995) TWA 3 mg/m<sup>3</sup>

**Engineering Controls:** Provide Local exhaust ventilation, process enclosures, and other forms or engineering controls are the preferred means for controlling exposures. Facilities using or storing this material should be equipped with an eyewash station and safety shower.

**Eye/face Protection:** Do not wear contact lenses when working with this substance. Avoid eye contact with this material at all times. Wear chemical safety glasses with side shields or chemical safety goggles.

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**Skin Protection:** Avoid skin contact with this material. Use appropriate chemical protective gloves when handling.

**Respiratory Protection:** Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure levels. If this is not possible, a respiratory protection program that meets OSHA 1910.134 requirements must be followed. Contact the manufacturer of your respiratory protection equipment for further information and/or recommendations.

**General Hygiene Considerations:** Showering and changing into street clothing after work is recommended.

### Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Color:	White to tan powder
Odor:	Characteristic odor
Odor Threshold:	None
Physical State:	Solid
Molecular Formula:	C <sub>4</sub> H <sub>4</sub> O <sub>5</sub>
Molecular Weight:	132.1
pH:	ND
Freezing Point:	ND
Melting Point:	161 C
Boiling Point:	ND
Flash Point:	None
Evaporation Rate:	None
Flammability (solid, gas):	Solid
Upper Flammability Limit:	None
Lower Flammability Limit:	None
Vapor Pressure:	ND
Vapor Density:	ND
Specific Gravity:	ND
Solubility (water):	Slightly soluble in water. (10% soluble)
Partition Coefficient (n-octanol/water):	ND
Auto-ignition Temperature:	174 C
Percent Volatile, wt %:	0%
Volatile Organic Compound (VOC) content, et. %:	0%

### Section 10: Stability and Reactivity

**Stability:** Stable under normal conditions of use.

**Conditions to Avoid:** Incompatible material. Also avoid light, heat and air.

**Incompatible Material:** Incompatible with oxidizing agents, strong acids, and strong bases.

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Hazardous Decomposition Products: Combustion may produce CO and/or CO<sub>2</sub>.

Possibility of Hazardous Reactions: Will not occur.

### Section 11: Toxicology Information

Registry of the Toxic Effects of Chemical Substances (RTECS®)

RTECS # Not Listed

Listed as: NA

Only selected data is presented here. See actual entry in RTECS for complete information.

#### ACUTE EFFECTS

Oral LD50:	ND
Dermal LD50:	ND
Inhalation:	ND
Eye Irritation:	ND
Skin Irritation:	ND
Sensitization:	ND

#### CHRONIC EFFECTS

Carcinogenicity:	ND
Mutagenicity:	ND
Reproductive Effects:	ND
Developmental Effects:	ND

### Section 12: Ecological Information

Ecotoxicity:	ND
Persistence/Degradability:	ND
Bioaccumulation/Accumulation:	ND
Mobility in Environment:	ND

### Section 13: Disposal Considerations

Disposal: Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste. Dispose of in accordance with federal, state and local regulations. Contact your local disposal service provider(s) for appropriate method(s) of disposal.

### Section 14: Transportation Information

U.S. Department of Transportation (U.S. DOT) Requirements

Proper Shipping Name: CORROSIVE SOLID, ACIDIC, ORGANICS, N.O.S.

Technical Name: OXALACETIC ACID

Hazard Class: 8 UN/NA Code: UN3261

Packaging Group III

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Reportable Quantity: NA  
Labels Required: Corrosive  
Marine Pollutant (49 CFR 172.101 Appendix B): NO  
Emergency Response Guidebook Number: 154

Canadian TDG (ground)  
Proper Shipping Description: ND

ICAO (air)  
Proper Shipping Description: UN3261, Corrosive Solid, acidic, organics, n.o.s. (Oxalacetic acid), 8, PG III  
Reportable Quantity: NA  
Labels Required: Corrosive  
Emergency Response Guidebook Number: 154

IMDG (water)  
Proper Shipping Description: UN3261, Corrosive Solid, acidic, organics, n.o.s. (Oxalacetic acid), 8, PG III  
Reportable Quantity: NA  
Labels Required: Corrosive  
Emergency Response Guidebook Number: 154

### Section 15: Regulatory Information

#### INVENTORY STATUS

<u>Inventory</u>	<u>Status</u>
United States (TSCA)	All ingredients are on the inventory or exempt from listing. TSCA Listings: TSCA Section 8(b)
Canada (DSL)	All ingredients are on the inventory or exempt from listing.
European Union (EINECS)	206-329-8
Japan (METI)	All other ingredients are on the inventory or exempt from listing.
Philippines	All other ingredients are on the inventory or exempt from listing.
South Korea (KECL)	All ingredients are on the inventory or exempt from listing.
Australia (AICS)	All ingredients are on the inventory or exempt from listing.
China	All ingredients are on the inventory or exempt from listing.

#### Federal Regulations:

##### SARA Title III Rules

##### Section 311/312 Hazard Classes

Fire Hazard	No
Reactive Hazard	No
Release of Pressure	No
Acute Health Hazard	Yes
Chronic Health Hazard	No

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### Section 313 Toxic Chemicals

- If this box is checked, this product contains EPCRA 313 chemical(s) subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40 CFR 372). If you are unsure whether you are subject to reporting requirements or need more information, call EPS's ECPRA Call Center at (800) 424-9346 or (703) 412-9810.

Component	CAS #	% by Wt.
None	NA	NA

### Section 302 Extremely Hazardous Substances (EHS) / CERCLA Hazardous Substances

Ingredient	CERCLA/SARA RQ	SARA EHS TPQ
None	NA	NA

### Other Federal Regulations:

Drug Precursor Regulations:	Not Listed.
Essential Chemical by the Chemical Diversion and Trafficking Act of 1988:	Not Listed.
Weapons Precursor Regulations:	Not Listed.

### State Regulations:

California: Based on available information this material does not contain any component(s) or chemical(s) currently known to the State of California to cause cancer, birth defects or reproductive harm at levels which would be subject to Proposition 65, California Safe Drinking Water and Toxic Enforcement Act of 1986.

### State HCS Programs:

Massachusetts:	ND	Pennsylvania:	ND
Rhode Island:	ND	Washington:	ND
New Jersey:	ND	Delaware:	ND
Michigan:	ND	New York:	ND
Minnesota:	ND		

### International Regulations:

#### International Phrases

R	-	34	Causes burns
S	-	22	Do not breathe dust
		24	Avoid contact with the skin.
		26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
		25	Avoid contact with eyes.
		36/37/39	Wear suitable protective clothing, gloves & eye/face protection.
		45	In case of accident, or if you feel unwell, seek medical advice immediately (show the label where possible).

### Canada (Additional Information):

WMIS Classification:	ND
CEPA:	Listed

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Canadian Domestic Substances List/Non-Domestic Substances List: Listed.

Product Registrations:

Japan: ND  
Korea: ND  
Finland: ND  
Norway: ND  
Sweden: ND  
Switzerland: ND  
New Zealand: ND

Section 16: **Other Information**

NFPA® 704 Ratings:

Health (H)	Flammability (F)	Reactivity ( R )	Special Hazards
-	-	-	-

HMIS® Ratings:

Health (H)	Flammability (F)	Physical Hazard (PH)	Personal Protection Equipment (PPE)
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Research Organics, Inc., Environmental & Safety Department

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