SAFETY DATA SHEET

Energy Mizer
295 Edwardia Drive.
Greensboro, NC 27409
Telephone: 800-627-5634

1. Identification

Product identifier	**Rust Go**
Chemical name	Oxalic Acid, Dihydrate
Synonym(s)	Anhydrous oxalic acid; Dicarboxylic acid; Ethanedioic acid
CAS number	6153-56-6
Chemical formula	C2H2O4
Other means of identification	
Product code	Not available.
Product sizes	25 pound pail.
Recommended use	Laundry Rust Remover Use pattern: Professional Use Only Recommended restrictions: None known.
Recommended restrictions	None known.
Chemical family	Pure substance
Manufacturer	Refer to Supplier
Supplier information	
Company name	Energy Mizer
Address	295 Edwardia Dr. Greensboro, NC, USA 27409
Telephone	(800) 627 5634
Emergency phone number	800-627-5634

2. Hazard(s) Identification

This material is classified as hazardous under OSHA regulations (29CFR 1910.1200).

Physical hazards	Corrosive to metals - Category 1
Health hazards	Acute Toxicity, oral - Category 3 Skin Corrosion/Irritation - Category 1 Eye Damage/Irritation - Category 1 Reproductive Toxicity - Category 2 Specific Target Organ Toxicity, Single Exposure -Category 3 (respiratory) Specific Target Organ Toxicity, Repeated Exposure - Category 1
Environmental hazards	Not currently regulated by OSHA, refer to Section 12 for additional information.
OSHA defined hazards	This substance does not meet the classification criteria according to OSHA Hazcom 2012.
Label elements	
Signal Word	DANGER!
Hazard statement(s)	May be corrosive to metals. Toxic if swallowed. Causes severe skin burns and eye damage. Suspected of damaging fertility or the unborn child. May cause respiratory irritation. May cause damage to the kidneys through prolonged or repeated exposure.

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Precautionary statement(s)

Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep only in original container. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Do not breathe dust, fume or vapor. Wear protective gloves/clothing and eye/face protection.
Response	Absorb spillage to prevent material damage. If exposed or concerned: Get medical advice/attention. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/physician. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.
Storage	Store in corrosive resistant container with a resistant inner liner. Store locked up. Store in a well-ventilated place. Keep container tightly closed.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise Classified (HNOC)	Other hazards which do not result in classification: Ingestion can cause irritation and corrosive action in the mouth, stomach and digestive tract. Contact with most metals will generate flammable hydrogen gas.
Supplemental Information	

3. Composition/information on ingredients

Pure substance

Chemical name	Common name and synonyms	CAS number	Concentration (%)
Oxalic acid	Dicarboxylic acid; Ethanedioic acid	6153-56-6	100.00

4. First-aid measures

Inhalation	Immediately remove person to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. Seek immediate medical attention/advice.
Skin contact	Take off all contaminated clothing immediately. Immediately flush skin with gently flowing, running water for at least 20 minutes. Do not rub area of contact. Cover wound with sterile dressing. Seek immediate medical attention/advice. Wash contaminated clothing before reuse. Leather and shoes that have been contaminated with the solution may need to be destroyed.
Eye contact	Immediately flush eyes with running water for at least 20 minutes. Protect unharmed eye. Seek immediate medical attention/advice.
Ingestion	Do NOT induce vomiting. Have victim rinse mouth with water, then give one to two glasses of water to drink. Seek immediate medical attention/advice. Never give anything by mouth if victim is unconscious.

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Most important symptoms and effects, both acute and delayed	May cause irreversible eye damage. Symptoms may include severe pain, tearing, redness, swelling and blurred vision. May cause severe skin irritation. Symptoms may include redness, blistering, pain and swelling. May cause respiratory irritation. Symptoms may include coughing, choking and wheezing. Ingestion may cause severe burns to the mucous membranes of the digestive tract. Symptoms may include abdominal pain, vomiting, burns, perforations, bleeding and eventually death. May damage fertility or the unborn child. Repeated or prolonged exposure may result in kidney effects.
Indication of any immediate medical attention and special treatment needed	Immediate medical attention is required. Causes burns. Treat symptomatically.
General Information	

5. Fire-fighting measures

Suitable extinguishing media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Water spray may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.
Unsuitable extinguishing media	Do not use direct stream of water, which can result in a dust cloud and explosion hazard.
Specific hazards arising from the chemical	Not considered flammable. Burning produces obnoxious and toxic fumes. Contact with metals may release small amounts of flammable hydrogen gas. Reacts violently with a wide variety of organic and inorganic chemicals including alcohol, carbides, chlorates, picrates, nitrates and metals.
Special protective equipment and precautions for fire-fighters	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
	.
Fire-fighting equipment/instructions	Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. A full-body chemical resistant suit should be worn. Move containers from fire area if safe to do so. Water spray may be useful in cooling equipment exposed to heat and flame. Dike for water control. Do not allow run-off from fire fighting to enter drains or water courses.
Specific methods	Use water with caution. Contact with water will generate considerable heat. Contact with most metals will generate flammable hydrogen gas.
General fire hazards	Not considered flammable.
Hazardous combustion products	Carbon dioxide and carbon monoxide.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	All persons dealing with clean-up should wear the appropriate protective equipment including self-contained breathing apparatus. Keep all other personnel upwind and away from the spill/release. Restrict access to area until completion of clean-up. Refer to Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION, for additional information on acceptable personal protective equipment.
Methods and materials for containment and cleaning up	Remove all sources of ignition. Ventilate area of release. Stop spill or leak at source if safely possible. Dike for water control. Dilute alkali with water and neutralize with acids (e.g. acetic acid/vinegar) Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand), then place absorbent material into a container for later disposal (see Section 13). Contact the proper local authorities.
Environmental precautions	Ensure spilled product does not enter drains, sewers, waterways, or confined spaces. For large spills, dike the area to prevent spreading.

7. Handling and storage

Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use in a well-ventilated area. Wear protective gloves/clothing and eye/face protection. See Section 8 for additional personal protection advice when handling this product. Do not eat, drink or smoke when using this product. Do not breathe dust, fume or vapor. Avoid contact with skin, eyes and clothing. Keep away from extreme heat and flame. Keep away from bases, metals and other incompatibles. Keep container tightly closed when not in use. Keep only in original container. Wash thoroughly after handling.

Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well-ventilated area. Store locked up. Store away from incompatibles and out of direct sunlight. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. Store in corrosion-resistant containers. Keep only in original container.

8. Exposure controls/personal protection

Occupational exposure limits

U.S. OSHA Exposure Limits (29 CFR 1910)

	Type	Value
Oxalic acid (CAS 6153-56-6)	STEL	2 mg/m³
	TWA	1mg/m³

US. ACGIH Threshold Limit Values

	Type	Value
Oxalic acid (CAS 6153-56-6)	STEL	2mg/m³
	TWA	1mg/m³

Biological limit values

Appropriate engineering controls

Use general or local exhaust ventilation to maintain air concentrations below recommended exposure limits.

Individual protection measures, such as personal protective equipment

Eye / face protection

Chemical splash goggles must be worn when handling this material. A full face shield may also be necessary.

Skin protection

Hand protection

Wear chemically protective gloves (impervious), boots, aprons, and gauntlets to prevent prolonged or repeated skin contact. Wear impervious gloves, such as butyl rubber. Unsuitable material: polyvinyl alcohol. Advice should be sought from glove suppliers.

Other

Other equipment may be required depending on workplace standards. An eyewash station and safety shower should be made available in the immediate working area.

Respiratory protection

If the TLV is exceeded, a NIOSH/MSHA-approved respirator is advised. Confirmation of which type of respirator is most suitable for the intended application should be obtained from respiratory protection suppliers. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134) or CSA Z94.4-02.

Thermal hazards

Not normally required.

General hygiene considerations

Do not breathe dust, fume or vapor. Avoid contact with skin, eyes and clothing. Do not eat, drink, smoke or use cosmetics while working with this product. Upon completion of work, wash hands before eating, drinking, smoking or use of toilet facilities. Remove and wash contaminated clothing before re-use. Do not take contaminated clothing home.

9. Physical and chemical properties

Appearance

Physical state

Solid.

Energy Mizer
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Form	Granular/Crystals
Color	Colorless
Odor	Odorless
Odor threshold	N/Av
pH	1.3
Melting point /freezing point	N/Av
Initial boiling point and boiling range	
	Decomposes
Flash point	Not applicable.
	Not applicable.
Evaporation rate	N/Av
Flammability (solid, gas)	Not applicable.
Lower flammability/explosive limit	Not applicable.
Upper flammability/explosive limit	Not applicable.
Vapour pressure	Very low
Vapour density	N/Av
Relative density	1.653
Solubility(ies)	
Other solubility(ies)	None known.
Solubility (water)	soluble
Partition coefficient (n-octanol/water)	1.74
Auto-ignition temperature	N/Ap
Decomposition temperature	Not available.
Viscosity	N/Av
Other information	
Explosive properties	Not explosive
Oxidizing properties	None known.
Specific gravity	1.653
Critical temperature	N/Av
VOC	Not available.
Volatilities %	N/Av
Other physical/chemical data	None.

10. Stability and reactivity

Reactivity	Contact with metals may release small amounts of flammable hydrogen gas. Corrosive in contact with metals .Oxalic acid is a mild reducing agent and is easily oxidized.
Chemical stability	Stable under the recommended storage and handling conditions prescribed.
Possibility of hazardous reactions	Hazardous polymerization does not occur. Contact with metals may release small amounts of flammable hydrogen gas.
Conditions to avoid	Avoid heat and open flame. Ensure adequate ventilation, especially in confined areas. Avoid contact with incompatible materials.
Incompatible materials	See Section 7 (Handling and Storage) for further details.
Hazardous decomposition products	None known, refer to hazardous combustion products in Section 5.

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11. Toxicological information

Information on likely routes of exposure

Routes of entry inhalation	YES
Routes of entry skin & eye	YES
Routes of entry Ingestion	YES
Routes of exposure skin absorption	NO

Most important symptoms/effects, acute and delayed

Harmful if inhaled. Inhalation of high concentrations of fumes or mists may cause severe irritation and corrosive damage to the nose, throat and upper respiratory tract. Symptoms may include coughing, choking and wheezing. Could result in pulmonary edema (fluid accumulation). Symptoms of pulmonary edema (chest pain, shortness of breath) may be delayed.
May cause irreversible eye damage. Symptoms may include severe pain, tearing, redness, swelling and blurred vision. May cause severe skin irritation. Symptoms may include redness, blistering, pain and swelling. May cause respiratory irritation. Symptoms may include coughing, choking and wheezing. Ingestion may cause severe burns to the mucous membranes of the digestive tract. Symptoms may include abdominal pain, vomiting, burns, perforations, bleeding and eventually death. May damage fertility or the unborn child. Repeated or prolonged exposure may result in kidney effects.

Information on toxicological effects

Acute toxicity

Acute Toxicity, oral - Category 3
Toxic if swallowed.

Components	**Species**	**Test Results**
Oxalic acid		
Acute		
Dermal		
LD50	Rabbit	>20000 mg/kg
inhalation		
LC50	Rat	N/Av
Oral		
LD50	Rat	375mg/kg (rat) (50-500 mg/kg(Human))

Skin Corrosion/Irritation

Classification: Skin Irritation - Category 1
Causes severe skin burns and eye damage. Skin contact may cause numbness or slight tingling, blisters, burns and possibly permanent damage.

Serious eye damage/Irritation

Classification: Serious eye damage/eye irritation - Category 1.
Causes serious eye damage. Symptoms may include severe pain, blurred vision, redness and corrosive damage.

Respiratory or skin sensitization

Not expected to be a skin or respiratory sensitizer.

Germ cell mutagenicity

Not expected to be mutagenic in humans.

Carcinogenicity

No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP.

Reproductive toxicity

Classification: Reproductive Toxicity - Category 2
Suspected of damaging fertility or the unborn child.

Specific target organ toxicity - single exposure

Classification: Specific Target Organ Toxicity, Single Exposure -Category 3 (respiratory) May cause respiratory irritation.

Specific target organ toxicity - repeated exposure

Classification: Specific Target Organ Toxicity, Repeated Exposure - Category 1
May cause damage to the kidneys through prolonged or repeated exposure if swallowed.

Energy Mizer
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Chronic effects Chronic skin contact with low concentrations may cause dermatitis. Prolonged or repeated inhalation of fumes or vapours, may cause chronic lung effects, such as bronchitis, and tooth enamel erosion.

Aspiration toxicity Not expected to be an aspiration hazard.

Further information None known or reported by the manufacturer.

12. Ecological information

Ecotoxicity Because of the low pH of this product, it would be expected to produce significant ecotoxicity upon exposure to aquatic organisms and aquatic systems. The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters.

Ecotoxicity data:

Ingredients	CAS No	Toxicity to Fish		
		LC50 / 96h	NOEC / 21 day	M Factor
Oxalic acid	6153-56-6	N/Av	N/Av	None.

Ingredients	CAS No	Toxicity to Daphnia		
		EC50 / 48h	NOEC / 21 day	M Factor
Oxalic acid	6153-56-6	N/Av	162.2mg/L	None.

Ingredients	CAS No	Toxicity to Algae		
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor
Oxalic acid	6153-56-6	N/Av	N/Av	None.

Persistence and degradability

Biodegradation is not applicable to inorganic materials.

Bioaccumulation potential No data is available on the product itself.

Components	Partition coefficent n-octanol/ater (log Kow)	Bioconcentration factor (BCF)
Oxalic acid (CAS 6153-56-6)	1.74	0.6

Mobility in soil No data is available on the product itself.

Other adverse effects

No additional information.

13. Disposal consideration

Disposal instructions Handle waste according to recommendations in Section 7. Empty containers retain residue (liquid and/or vapour) and can be dangerous.

Local disposal regulations Dispose in accordance with all applicable federal, state, provincial and local regulations.

Hazardous waste code If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

Waste from residues / unused products None known.

Contaminated packaging Empty containers should be taken for local recycling or waste disposal.

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14. Transport information

49CFR/DOT

UN Number	UN3267
UN proper shipping name	CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. (Oxalic Acid)
Transport hazard class(es)	
Class	8
Subsidiary ris	
Packaging group	II
Special precautions for user	None.

TDG

UN Number	UN3267
UN proper shipping name	CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. (Oxalic Acid)
Transport hazard class(es)	
Class	8
Subsidiary ris	none
Packaging group	II
Special precautions for user	

ICAO/IATA

UN Number	UN3267
UN proper shipping name	Corrosive liquid, basic, organic, n.o.s. (Oxalic Acid)
Transport hazard class(es)	
Class	8
Subsidiary ris	none
Packaging group	III
Environmental hazards	
ERG Code	
Special precautions for user	Refer to ICAO/IATA Packing Instruction
Other information	
Passenger and cargo aircraft	Forbidden
Cargo aircraft only	Forbidden

General information	None known.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

15. Regulatory information

US Federal Information: SARA TITLE III: Sec. 311 and 312, MSDS Requirements, 40 CFR 370 Hazard Classes: Acute Health Hazard. Chronic Health Hazard

Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds for the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

Components listed below are present on the following U.S. Federal chemical lists:

Energy Mizer
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Ingredients	CAS #	TSCA Inventory	CERCLA Reportable Quantity(RQ) (40 CFR 117.302):	SARA TITLE III: Sec. 302, Extremely Hazardous Substance, 40 CFR 355:	SARA TITLE III: Sec. 313, 40 CFR 372, Specific Toxic Chemical	
					Toxic Chemical	de minimus Concentration
Oxalic acid	6153-56-6	Yes	N/Ap	N/Av	No	N/Ap

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes

Delayed Hazard - Yes

Fire Hazard -

Pressure Hazard -

Reactivity Hazard -

US state regulations

The following chemicals are specifically listed by individual States:

Ingredients	CAS #	California Proposition 65		State "Right to Know" Lists					
		Listed	Type of Toxicity	CA	MA	MN	NJ	PA	RI
Oxalic acid	6153-56-6	No	N/Ap	No	No	No	No	Yes	Yes

Canadian Information:

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

WHMIS information: Refer to Section 2 for a WHMIS Classification for this product.

International Inventories

Components listed below are present on the following International Inventory lists:

Ingredients	CAS #	European EINECs	Australia AICS	Philippines PICCS	Japan ENCS	Korea KECI/KECL	China IECSC	NewZealand IOC
Oxalic acid	6153-56-6	N/Av	Present	Present	(2)-844	No information available.	Present	HSR003571

16. Other information, including date of preparation or last revision

Issue date 05/27/2015

Version # 1

Legend

ACGIH: American Conference of Governmental Industrial Hygienists
CA: California
CAS: Chemical Abstract Services
CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR: Code of Federal Regulations
DOT: Department of Transportation
EPA: Environmental Protection Agency
HMIS: Hazardous Materials Identification System
HSDB: Hazardous Substances Data Bank
IARC: International Agency for Research on Cancer
Inh: Inhalation
IUCLID: International Uniform ChemicaL Information Database
MA: Massachusetts

Energy Mizer
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MN: Minnesota
MSHA: Mine Safety and Health Administration
N/Ap: Not Applicable
N/Av: Not Available
NFPA: National Fire Protection Association
NIOSH: National Institute of Occupational Safety and Health
NJ: New Jersey
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
PA: Pennsylvania
PEL: Permissible exposure limit
RCRA: Resource Conservation and Recovery Act
RI: Rhode Island
RTECS: Registry of Toxic Effects of Chemical Substances
SARA: Superfund Amendments and Reauthorization Act
STEL: Short Term Exposure Limit
TDG: Canadian Transportation of Dangerous Goods Act & Regulations
TLV: Threshold Limit Values
TWA: Time Weighted Average
WHMIS: Workplace Hazardous Materials Identification System

Other special considerations for handling

: Provide adequate information, instruction and training for operators.

HMIS Rating : * - Chronic hazard 0 - Minimal 1 - Slight 2 - Moderate 3 - Serious 4 - Severe

Health: 3 *Flammability:* 0 *Reactivity:* 2

NFPA Rating

0 - Minimal 1 - Slight 2 - Moderate 3 - Serious 4 - Severe

: *Health:* 3 *Flammability:* 0 *Instability:* 2 *Special Hazards:* None.

Disclaimer

Prepared by: ICC The Compliance Center Inc.
http://www.thecompliancecenter.com

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Bibliography

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