

## SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

**SUPPLIER:**  
**Green Biologics, Inc.**

1130 Gahanna Parkway  
Gahanna, OH 42320-6615  
Inquiry Phone: (804) 368-6136  
Emergency Phone: (800) 424-9300  
Date Prepared: 07/25/2014

Use of the Substance / Preparation: Intermediate Solvent

Product manufactured by Green Biologics, Inc. in Emmetsburg, Iowa, United States of America

**CHEMICAL NAME:** Acetone  
**PRODUCT NAME:** Renewa-Tone™  
**CAS #:** 67 – 64 – 1

NFPA hazard codes: NFPA acute hazard rating:  
0 = Least 3 = High Health: 2  
1 = Slight 4 = Extreme Flammability: 3  
2 = Moderate Reactivity: 0

Molecular Formula: C(3)H(6)O

Molecular Weight: 58.08 g/mol  
Chemical Family: ketone, symmetrical  
Synonyms: 2-Propanone

Health	2
Fire	3
Reactivity	0

## SECTION 2: CHEMICAL COMPOSITION

INGREDIENT (chemical name)	CAS#	% Range	OSHA Status
Acetone	67-64-1	>99.5%	Hazardous

## SECTION 3: HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

DANGER: FLAMMABLE LIQUID (category 2). THIS PRODUCT MAY CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION.

Specific target organ toxicity – Central Nervous System

Use with local exhaust ventilation.

Wear NIOSH-certified chemical goggles.

Wear protective clothing.

Keep away from heat/sparks/open flames/possible static electricity/hot surfaces

Eye wash fountains and safety showers must be easily accessible.

Wear full face shield if splashing hazard exists.

Wear a NIOSH-certified vapor respirator.

Vapors may cause drowsiness and dizziness.

Prolonged or repeated skin contact may cause drying, cracking or irritation.

### Potential Health Effects

#### Principle Routes of Exposure

Routes of entry for solids and liquids are eye and skin contact, ingestion and inhalation. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

#### OSHA Regulatory Status

This material is hazardous as defined by the American OSHA Hazard Communication Standard (29CFR 1910.1200)

#### Main Symptoms

Dizziness, drowsiness, eye irritation, headache, incoordination, light-headedness, nausea, stomach pain, stupor, vomiting, and weakness.

#### Target Organ Effects

Brain and central nervous system - depression

#### Acute Toxicity:

Acute overexposure to high vapor concentrations of acetone may produce central nervous system depression and irritation to the mucous membranes. Acute toxicity only occurs at levels that greatly exceed releases and resultant exposures.

**SECTION 4: FIRST AID MEASURES****General Advice**

Remove contaminated clothing immediately and dispose of safely. If unconscious, place in recovery position and seek medical advice. Those providing first aid should take protective measures themselves.

**If Inhaled**

Keep the affected person in fresh air, and keep the person calm. Position those affected in a comfortable manner, assist if necessary.

**Eyes**

In the case of contact with the eyes, rinse cautiously with plenty of water for at least 15 minutes, including under the eyelids. Remove contact lenses, continue rinsing. If eye irritation persists, seek medical advice/physician.

**Skin Contact**

Take off affected clothing and wash affected areas immediately with plenty of water.

**Ingestion (if Swallowed)**

For adults, small volume ingestion is harmless. In the case of children and/or large volume ingestion, seek immediate medical help. Do not induce vomiting unless directed by poison control center or health care professionals.

**Main Symptoms**

Dizziness, drowsiness, eye irritation, headache, incoordination, light-headedness, nausea, stomach pain, stupor, vomiting, and weakness.

**Notes to Physician**

Treat symptomatically. If ingested, irrigate the stomach using activated charcoal. Chemical pneumonitis could follow respiratory exposure.

**SECTION 5: FIRE FIGHTING MEASURES****OSHA Flammability Classification**

Flammable liquids Class I B

**NPFA Hazard Codes**

Flash Point	-20° C	(closed cup)
Auto ignition	465° C	(DIN 51794)
Lower explosion limit	2.6% (V)	
Upper explosion limit	12.8% (V)	

Health: 2                      Fire: 3                      Reactivity: 0                      Special:

**Suitable Extinguishing Media**

Water spray, dry extinguishing media, alcohol-resistant foam, carbon dioxide (CO<sub>2</sub>)

**Extinguishing Media which must not be used for Safety Reasons**

N/A

**Protective Equipment for Fire Fighters**

Firefighter protection should include self-contained breathing apparatus (NIOSH-approved) and full firefighting turn out gear.

**Unusual Fire and Explosion Hazards and Other Exposure Hazards Regarding Gases and Combustion**

Under conditions giving incomplete combustion, hazardous gases produced may consist of: carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>). Combustion of gases of organic materials must in principle be graded as inhalation poisons. Vapor is heavier than air and can travel long distances to a source of ignition and flashback. Vapors may form explosive mixtures with air. Prevent buildup of vapors or gases to explosive concentrations.

**Precautions for Fire Fighters**

Cool containers and tanks with water spray. Collect contaminated extinguishing water separately. Do not allow extinguishing water to reach sewage or effluent systems. Foam should be applied in large quantities as it is broken down to some extent by the product. Keep people away from and upwind of the fire. Acetone/water solutions that contain more than 2.5 % acetone have flash points.

When the acetone concentration is greater than 8 % (by weight) in a closed container, it is within flammable range and can cause fire or explosion if a source of ignition were introduced.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### Personal Precautions

Avoid inhalation. Avoid contact with the skin, eyes and clothing. Avoid breathing vapors or mists. Keep people away from or upwind of spills and leaks. Ensure adequate ventilation, especially in confined areas. Keep away from heat and sources of ignition. For emergency responders: See Section 8 regarding personal protection.

### Environmental Precautions

Substance/product is RCRA hazardous due to its properties.

Prevent further leakage or spillage using dikes or other containment methods. Do not discharge product into the sewage, effluent or aquatic water systems without pretreatment (via biological treatment plant).

This product is not expected to persist in the environment.

### Methods for Containment

Prevent ignition, ventilate the area and stop the flow of material if possible, without risking further injury. Dike or otherwise contain spilled material where possible.

### Methods for Clean Up

Spills should be contained, solidified, and placed in suitable containers for disposal. Sand and earth are good materials to use for solidifying spill; DO NOT use combustible materials such as saw dust. Keep containers closed for disposal. For small amounts, pick up with sand. For large amounts, pump off product into closed containers, or clean up promptly by scoop or vacuum. Dispose of in accordance with local regulations. Take necessary action to avoid static electricity discharge (which may cause ignition of vapors).

### Authority Notification

Within the United States, call the National Response Center (800-424-8802) and appropriate state and local authorities if the quantity released over 24 hours is equal to or greater than the reportable quantity listed below:

Reportable Quantity (RQ): 5,000 lbs. / 2270 kg (Acetone)

## SECTION 7: HANDLING AND STORAGE

### Handling

#### General Advice

Use antistatic tools. Ensure adequate ventilation. Avoid breathing high vapor concentrations. Wear splash goggles, lab coat, gloves, and vapor respirator when handling large volumes.

#### Advice on Safe Handling

Avoid contact with skin, eyes and clothing. Wash hands thoroughly before eating or taking breaks and immediately after handling the product. Provide sufficient air exchange and/or exhaust in work rooms. Use only with adequate ventilation.

#### Advice on Protection against Fire and Explosion

Prevent electrostatic charge. Sources of ignition should be kept well clear of the product. Fire extinguishers should be located near stored product. In case of fire, emergency cooling water should be readily available. Storage containers should be grounded to prevent electrostatic charge. Vapor is heavier than air and can travel considerable distance to a source of ignition and flashback. Vapors may form explosive mixture with air.

### Storage

#### General Advice

Keep away from sources of ignition, including heat – No Smoking. Keep containers tightly closed in a cool, well ventilated place. Handle and open containers with care. Storage containers should be grounded, including when in transit. Keep away from oxidizing materials and reducing agents. Do not ingest.

Store in stainless steel or mild steel containers only. Product may dissolve some forms of plastic and rubber. Keep containers tightly closed and sealed until ready for use.

**Advice on Common Storage**

Acetone is not compatible with: Strong oxidizing agents; acids, acid chlorides, alkali materials, and reducing agents.

**SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION**
**Components with Workplace Control Parameters**

Acetone	OSHA	STEL	750 ppm
CAS 67-64-1	ACGIH	TWA value:	500 ppm;

**Components with Workplace Control Parameters**

Acetone	US NIOSH Pocket Guide	CEILING:	250 ppm
CAS 67-64-1	US NIOSH IDHL	Concentration:	590 mg/m3

**Advice on System Design**

Provide local exhaust ventilation to maintain recommended PEL. Typically 10 air changes per hour should be used.

**Engineering Advice**

General ventilation is frequently insufficient as the only means of controlling employee exposure. Local ventilation is preferred. Explosion-proof equipment (such as switches, fans and grounded ducts) should be used in mechanical ventilation systems.

**Personal Protective Equipment**
**Respiratory Protection**

Observe OSHA regulations for respirator use (29 CFR 1910.134). Wear a NIOSH-certified (or equivalent) respirator as necessary.

**Hand Protection**

Wear chemical resistant protective gloves. Suitable materials for gloves: Butyl-rubber; min layer thickness: 0.3 mm; break through time: 480 min.

**Eye Protection**

Tightly fitting safety goggles should be worn. Wear face shield if splashing hazard exists.

**Skin and Body Protection**

Wear impervious protective clothing. Wear face shield and protective suit for abnormal processing problems.

**General Safety and Hygiene Measures**

Avoid contact with skin, eyes and clothing. Do not breathe vapors or spray mist. Work place should be equipped with eyewash stations and safety showers in close proximity to the product. When handling product, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product.

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

Form	Liquid	
Odor	Slightly aromatic, ethereal, fruity	
Odor Threshold	62 ppm	
Color	Clear	
Molecular Weight	58.08	
Molecular Formula	C3 H6 O	
Flash Point	1.4° F / -17.0° C	(Tag open cup)
Auto ignition Temperature	869° F / 465° C	
Boiling Temperature	56° C / 133° F	
Evaporation Rate	0.5	(n-butyl acetate =1)
Vapor Pressure	5333 mbar	(39.6° C / 103.1° F)
Specific Gravity	0.791	(25° C / 77° F)
Freezing Point	- 94° C	
Lower Explosion Limit	2.6 Vol %	
Upper Explosion Limit	12.8 Vol %	
Viscosity, dynamic	0.295 cP	(25° C / 77° F)
Solubility in water	Miscible	
Thermal Decomposition Temperature:	(DTA) No exotherm to boiling	

**SECTION 10: STABILITY AND REACTIVITY****Hazardous Reactions**

This product is chemically stable under recommended storage conditions.

Product reacts violently with strong oxidizing agents.

Avoid contact with acids, oxidizing agents, and reducing agents.

Hazardous polymerization: will not occur.

Product is non-corrosive in presence of glass.

Product reacts explosively with sulfuric and nitric acid; do not store or mix these chemicals together.

Avoid contact with heat, sparks, open flame, and static discharge. Avoid any source of ignition. Vapors may form explosive mixture with air.

**SECTION 11: TOXICOLOGICAL INFORMATION****Principle Routes of Exposure**

Inhalation, Eye contact, Skin contact, Ingestion.

**Acute Toxicity****Oral**

LD50/rat: 5,800 mg/kg

LD50/rabbit: 5,340 mg/kg

**Inhalation**

LC50/rat: 4 h: 50,100 mg/m<sup>3</sup>

**Dermal**

LD50/guinea pig: 7,426 mg/kg

**Skin Irritation**

Rabbit: mild skin irritation – 24 h

**Eye Irritation**

Rabbit: Eye irritation – 24 h

**Chronic Toxicity****Experience in Humans**

Main symptoms include dizziness, drowsiness, nausea, vomiting, abdominal pain, vertigo, dermatitis, and diarrhea.

Based on viscosity, a potential aspiration hazard cannot be excluded.

High concentrations have a narcotizing effect.

**Other information**

There is a possibility of liver damage.

Handle in accordance with good industrial hygiene and safety practices.

**SECTION 12: ECOLOGICAL INFORMATION****Oxygen Demand Data**

ThOD: 2,200 mg/g

COD: 2,000 mg/g

**Acute and Prolonged Toxicity to Fish**

Oncorhynchus mykiss (rainbow trout)/LC50: 5,540 mg/l

Exposure time: 96 hours

**Acute toxicity to aquatic invertebrates**

Daphnid (water flea)/LC50: 8,800 mg/l

Exposure time: 48 hours

**Other ecotoxicological advice:**

91 % of the material is readily biodegradable (OECD Test Guideline 301B). Material does NOT bioaccumulate.

**SECTION 13: DISPOSAL CONSIDERATIONS****Waste Disposal of Substance**

Dispose of in an RCRA-licensed facility. Do not discharge into waterways or sewer systems without proper authorization. Disposal required in compliance with all waste management related state and local regulations. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care as this material is extremely flammable.

**Used Container Disposal**

Since emptied containers retain product residue, follow label warnings even after container is emptied. It is recommended to crush, puncture or use other means to render the container unusable and to prevent unauthorized use of used containers. Residual vapors may explode on ignition; do not cut, drill, grind or weld on or near used or empty containers. Dispose of all used containers as unused product (see above).

**SECTION 14: TRANSPORT INFORMATION****Land transport**

## USDOT

Proper Shipping Name: Acetone  
Hazard Class: 3  
ID Number: UN 1090  
Packing Group: II  
Reportable Quantity: 5000 lbs. / 2270 kg

**Sea Transport**

## IMDG

Proper Shipping Name: Acetone  
Hazard Class: 3  
ID Number: UN 1090  
Packing Group: II  
Marine Pollutant: No

**Air Transport**

## IATA/ICAO

Proper Shipping Name: Acetone  
Hazard Class: 3  
ID Number: UN 1090  
Packing Group: II

**IBC Code**

Product Name: Acetone  
Pollution Category: Z

**TDG (Transport of Dangerous Goods) Canada**

Proper Shipping Name: Acetone  
Hazard Class: 3  
ID Number: UN 1090  
Packing Group: II

**SECTION 15: REGULATORY INFORMATION****OSHA Regulatory Status**

This material is hazardous as defined by the American OSHA Hazard Communication Standard (29CFR 1910.1200)

Recommended use: For industrial use only.

**Federal/State Regulations**

Components of this product are listed in the quoted regulations. For details, please refer to the regulations directly. This list is not exhaustive, so check carefully for other applicable regulations.

This product is listed on the TSCA inventory.

U.S. Department of Homeland Security: 2000 lb STQ

**State Regulations**

MA – RTK List

NJ – RTK List

PA – RTK List

RI – RTK List

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

**HMIS III rating**

Health: 2

Flammability: 3

Physical Hazard: 0

HMIS uses a numbering scale ranging from 0 to 4 to indicate the degree of hazard. A value of zero means that the substance possesses essentially no hazard; a rating of four indicates high hazard.

**SECTION 16: OTHER INFORMATION**

Local contact information:

[product.reg@greenbiologics.com](mailto:product.reg@greenbiologics.com)

**DISCLAIMER:**

THE INFORMATION PROVIDED HEREIN IS PRESENTED IN GOOD FAITH AND BELIEVED TO BE ACCURATE. THE DATA AND TEST METHODS USED TO GENERATE DATA WAS PROVIDED BY SUPPLIERS OR WAS GENERATED FROM PUBLICLY AVAILABLE SOURCES AND IS BELIEVED TO BE ACCURATE. NO TESTS OR DATA WERE CONDUCTED BY OR GENERATED BY GREEN BIOLOGICS, INC. THE INFORMATION AND DATA PROVIDED HEREIN IS PROVIDED FOR YOUR GUIDANCE ONLY. THERE ARE MANY FACTORS AND VARIABLES THAT MAY AFFECT PERFORMANCE, APPLICATION OR USE, OR PROCESSING OF THIS PRODUCT. WE RECOMMEND THAT YOU CONDUCT YOUR OWN TESTS TO DETERMINE THE SUITABILITY OF THIS PRODUCT FOR YOUR PARTICULAR PURPOSE OR APPLICATION PRIOR TO USE. NO WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE MADE REGARDING PRODUCTS DESCRIBED OR DATA OR INFORMATION SET FORTH IN THIS DOCUMENT, OR THAT THE PRODUCTS, DATA OR INFORMATION MAY BE USED WITHOUT INFRINGING THE INTELLECTUAL PROPERTY RIGHTS OF OTHERS. IN NO CASE SHALL ANY INFORMATION PROVIDED IN THIS DOCUMENT BE CONSIDERED A PART OF OUR TERMS AND CONDITIONS OF SALE. YOU EXPRESSLY UNDERSTAND AND AGREE THAT THE INFORMATION, DESCRIPTIONS AND DATA PROVIDED HEREIN ARE PROVIDED BY GREEN BIOLOGICS, INC. FREE OF CHARGE AND GREEN BIOLOGICS, INC. ASSUMES NO OBLIGATION OR LIABILITY FOR THE INFORMATION PROVIDED, OR THE DATA OR RESULTS OBTAINED, ALL SUCH INFORMATION BEING PROVIDED TO YOU AND ACCEPTED BY YOU AT YOUR OWN RISK.