

### SECTION 1: Identification

#### 1.1. Identification

Product form : Substance  
 Substance name : BIOPURE C3-ONE  
 Chemical name : Acetone  
 CAS No : 67-64-1  
 Formula : C3 H6 O  
 Other means of identification : 2-Propanone

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

Use of the substance/mixture : Industrial use

#### 1.3. Details of the supplier of the safety data sheet

Manufacturer  
 Central MN Renewables, LLC. A Subsidiary of Green Biologics Ltd.  
 17936 Heron Road  
 Little Falls, MN 56345 - United States  
 T 320-632-1614

Supplier  
 Green Biologics Inc.  
 10338 Stony Run Lane  
 Ashland, VA 23005  
 T: 1-804-368-6136

#### 1.4. Emergency telephone number

Emergency number : (800) 424-9300 (CCN# 677246) Outside USA and Canada: +1 703-741-5970

### SECTION 2: Hazard(s) identification

#### 2.1. Classification of the substance or mixture

##### GHS-US classification

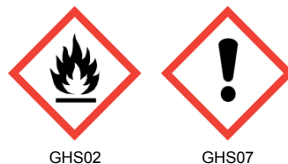
Flam. Liq. 2 H225 - Highly flammable liquid and vapor  
 Eye Irrit. 2A H319 - Causes serious eye irritation  
 STOT SE 3 H336 - May cause drowsiness or dizziness

Full text of H statements : see section 16

#### 2.2. Label elements

##### GHS-US labeling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

H225 - Highly flammable liquid and vapor  
 H319 - Causes serious eye irritation  
 H336 - May cause drowsiness or dizziness

Precautionary statements (GHS-US) :

P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking  
 P233 - Keep container tightly closed  
 P240 - Ground/Bond container and receiving equipment  
 P241 - Use explosion-proof electrical, lighting, ventilating equipment  
 P242 - Use only non-sparking tools  
 P243 - Take precautionary measures against static discharge  
 P261 - Avoid breathing fume, mist, spray, vapors  
 P264 - Wash hands thoroughly after handling  
 P271 - Use only outdoors or in a well-ventilated area  
 P280 - Wear protective gloves/protective clothing/eye protection/face protection  
 P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower  
 P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing

# BIOPURE C3-ONE

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P312 - Call a doctor if you feel unwell  
P337+P313 - If eye irritation persists: Get medical advice/attention  
P370+P378 - In case of fire: Use carbon dioxide (CO<sub>2</sub>), dry chemical powder, foam to extinguish  
P403+P233 - Store in a well-ventilated place. Keep container tightly closed  
P403+P235 - Store in a well-ventilated place. Keep cool  
P405 - Store locked up  
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

### 2.3. Other hazards

Other hazards not contributing to the classification : Repeated exposure may cause skin dryness or cracking.

### 2.4. Unknown acute toxicity (GHS US)

Not applicable

## SECTION 3: Composition/Information on ingredients

### 3.1. Substance

Name : BIOPURE C3-ONE  
CAS No : 67-64-1

Name	Product identifier	%	GHS-US classification
Acetone	(CAS No) 67-64-1	>= 99.5	Flam. Liq. 2, H225 Eye Irrit. 2A, H319 STOT SE 3, H336

Full text of H-phrases: see section 16

### 3.2. Mixture

Not applicable

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures general : Call a poison center/doctor/physician if you feel unwell. If you feel unwell, seek medical advice (show the label where possible).  
First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.  
First-aid measures after skin contact : If skin irritation occurs: Get medical advice/attention. Wash skin with plenty of water.  
First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.  
First-aid measures after ingestion : Call a poison center/doctor/physician if you feel unwell.

### 4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries : May cause drowsiness or dizziness.  
Symptoms/injuries after inhalation : May cause drowsiness or dizziness.  
Symptoms/injuries after eye contact : Eye irritation.

### 4.3. Indication of any immediate medical attention and special treatment needed

Not applicable.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

### 5.2. Special hazards arising from the substance or mixture

Fire hazard : Highly flammable liquid and vapor.  
Reactivity : Sulfuric acid. Nitric acid. Heating may cause a fire.

### 5.3. Advice for firefighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

# BIOPURE C3-ONE

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

##### 6.1.1. For non-emergency personnel

Emergency procedures : Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with skin and eyes. No open flames, no sparks, and no smoking. Evacuate unnecessary personnel.

##### 6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

#### 6.2. Environmental precautions

Avoid release to the environment.

#### 6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Use only explosion-free, grounded electrical equipment. In case of large spillages: Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Shovel or sweep up and put in a closed container for disposal. Small quantities of liquid spill: take up in non-combustible absorbent material and shovel into container for disposal. Notify authorities if product enters sewers or public waters.

Other information : Dispose of materials or solid residues at an authorized site.

#### 6.4. Reference to other sections

For further information refer to section 13.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Precautions for safe handling : Use only outdoors or in a well-ventilated area. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with skin and eyes. Wear personal protective equipment. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Flammable vapors may accumulate in the container. Use explosion-proof equipment.

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

#### 7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Ground/bond container and receiving equipment.

Storage conditions : Store locked up. Store in a well-ventilated place. Keep container tightly closed. Keep cool.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

Acetone (67-64-1)		
ACGIH	ACGIH TWA (ppm)	250 ppm
ACGIH	ACGIH STEL (ppm)	500 ppm
OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	2400 mg/m <sup>3</sup>
OSHA	OSHA PEL (TWA) (ppm)	1000 ppm

#### 8.2. Exposure controls

Appropriate engineering controls : Use only explosion-proof equipment. Use non-sparking handtools. Ensure good ventilation of the work station.

Hand protection : Protective gloves.

Eye protection : Chemical goggles or safety glasses.

Skin and body protection : Wear suitable protective clothing.

Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment.

Environmental exposure controls : Avoid release to the environment.

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

Physical state : Liquid

# BIOPURE C3-ONE

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Color	: clear
Odor	: Fruity aromatic
Odor threshold	: 62 ppm
pH	: No data available
Melting point	: Not applicable
Freezing point	: -94 °C
Boiling point	: 56 °C
Flash point	: -17 °C
Relative evaporation rate (butyl acetate=1)	: 0.5
Flammability (solid, gas)	: No data available
Explosion limits	: 2.6 - 12.8 vol %
Explosive properties	: No data available
Oxidizing properties	: No data available
Vapor pressure	: 5333 mbar
Relative density	: 0.791
Relative vapor density at 20 °C	: No data available
Molecular mass	: 58.08 g/mol
Solubility	: Miscible.
Log Pow	: No data available
Auto-ignition temperature	: 465 °C
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: 0.295 cP

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Sulfuric acid. Nitric acid. Heating may cause a fire.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

Oxidizing agents and reducing agents. No flames, no sparks. Eliminate all sources of ignition.

### 10.5. Incompatible materials

Oxidizing agent. Nitric acid. Reducing agents. Sulfuric acid.

### 10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced. On combustion, forms: carbon oxides (CO and CO<sub>2</sub>).

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

Acetone (67-64-1)	
LD50 oral rat	5800 mg/kg
LC50 inhalation rat (mg/l)	50100 mg/m <sup>3</sup> (Exposure time: 8 h)
ATE US (oral)	5800.000 mg/kg body weight

Skin corrosion/irritation : Not classified  
Serious eye damage/irritation : Causes serious eye irritation.

# BIOPURE C3-ONE

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity – single exposure	: May cause drowsiness or dizziness.
Specific target organ toxicity – repeated exposure	: Not classified
Aspiration hazard	: Not classified
Symptoms/injuries after inhalation	: May cause drowsiness or dizziness.
Symptoms/injuries after eye contact	: Eye irritation.

### SECTION 12: Ecological information

#### 12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

Acetone (67-64-1)	
LC50 fish 1	4.74 - 6.33 ml/l (Exposure time: 96 h - Species: Oncorhynchus mykiss)
EC50 Daphnia 1	10294 - 17704 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
LC50 fish 2	6210 - 8120 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
EC50 Daphnia 2	12600 - 12700 mg/l (Exposure time: 48 h - Species: Daphnia magna)

#### 12.2. Persistence and degradability

BIOPURE C3-ONE (67-64-1)	
Persistence and degradability	Not established.

#### 12.3. Bioaccumulative potential

BIOPURE C3-ONE (67-64-1)	
Bioaccumulative potential	Not established.

Acetone (67-64-1)	
BCF fish 1	0.69
Log Pow	-0.24

#### 12.4. Mobility in soil

BIOPURE C3-ONE (67-64-1)	
Ecology - soil	Not established.

#### 12.5. Other adverse effects

Effect on global warming : No known effects from this product.  
Not established

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.  
Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.  
Additional information : Flammable vapors may accumulate in the container.

### SECTION 14: Transport information

#### Department of Transportation (DOT)

In accordance with DOT  
Transport document description : UN1090 Acetone, 3, II  
  
UN-No.(DOT) : UN1090  
Proper Shipping Name (DOT) : Acetone  
Class (DOT) : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120

# BIOPURE C3-ONE

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Hazard labels (DOT) : 3 - Flammable liquid



Packing group (DOT) : II - Medium Danger

DOT Packaging Non Bulk (49 CFR 173.xxx) : 202

DOT Packaging Bulk (49 CFR 173.xxx) : 242

DOT Special Provisions (49 CFR 172.102) : IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized  
T4 - 2.65 178.274(d)(2) Normal..... 178.275(d)(3)  
TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling =  $97 / 1 + a (tr - tf)$  Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling

DOT Packaging Exceptions (49 CFR 173.xxx) : 150

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 5 L

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 60 L

DOT Vessel Stowage Location : B - (i) The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) "On deck only" on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded

Emergency Response Guide (ERG) Number : 127

Other information : No supplementary information available.

### TDG

No additional information available

### Transport by sea

UN-No. (IMDG) : 1090

Proper Shipping Name (IMDG) : ACETONE

Class (IMDG) : 3 - Flammable liquids

Packing group (IMDG) : II - substances presenting medium danger

### Air transport

UN-No. (IATA) : 1090

Proper Shipping Name (IATA) : Acetone

Class (IATA) : 3 - Flammable Liquids

Packing group (IATA) : II - Medium Danger

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

#### Acetone (67-64-1)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

EPA TSCA Regulatory Flag : T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA

### 15.2. International regulations

#### National regulations

#### BIOPURE C3-ONE (67-64-1)

All chemical substances in this product are listed in the EPA (Environment Protection Agency) TSCA (Toxic Substances Control Act) Inventory

# BIOPURE C3-ONE

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### Acetone (67-64-1)

Listed on the AICS (Australian Inventory of Chemical Substances)  
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)  
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory  
Listed on the Korean ECL (Existing Chemicals List)  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)  
Listed on the Canadian IDL (Ingredient Disclosure List)  
Listed on INSQ (Mexican National Inventory of Chemical Substances)  
Listed on CICR (Turkish Inventory and Control of Chemicals)

### 15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

### Acetone (67-64-1)

U.S. - Massachusetts - Right To Know List  
U.S. - New Jersey - Right to Know Hazardous Substance List  
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List  
U.S. - Pennsylvania - RTK (Right to Know) List

## SECTION 16: Other information

Full text of H-phrases:

H225	Highly flammable liquid and vapor
H319	Causes serious eye irritation
H336	May cause drowsiness or dizziness

NFPA health hazard

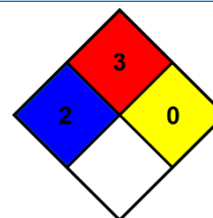
: 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.

NFPA fire hazard

: 3 - Liquids and solids that can be ignited under almost all ambient conditions.

NFPA reactivity

: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health

: 2 Moderate Hazard - Temporary or minor injury may occur

Flammability

: 3 Serious Hazard - Materials capable of ignition under almost all normal temperature conditions. Includes flammable liquids with flash points below 73 F and boiling points above 100 F, as well as liquids with flash points between 73 F and 100 F. (Classes IB & IC)

Physical

: 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

Personal protection

: C

C - Safety glasses, Gloves, Synthetic apron

SDS GHS US CUSTOM BLUE

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product*