



(+)-RUGULOSIN
SAFETY DATA SHEET
Date of Issue: 2019-12-19
Revision Number: A/0

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product Identifier : (+)-Rugulosin
Product Number : R037
CAS Number : [23537-16-8]

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

Identified Uses : For research use only - restricted to professional users.
Uses Advised Against : Not for human or animal use

1.3 Details of the supplier of the safety data sheet

Company : TOKU-E Company
715 W Orchard Dr. Suite 3
Bellingham, WA 98225
Phone Number : (360) 734-1789
E-mail Address : info@toku-e.com
Safety Data Sheet Issued by : TOKU-E Company (USA)

1.4 Emergency telephone number

Emergency Phone Number (Internat.) : +1 (352) 353-3500 (INFOTRAC, 24-Hour Number)
Emergency Phone Number (US Only) : 1 (800) 535-5053 (INFOTRAC, 24-Hour Number)

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS classification in accordance with 29 CFR 1910 (OSHA HCS)
Not classified as a hazardous substance or mixture.

2.2 GHS label elements, including precautionary statements

Not classified as a hazardous substance or mixture.

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

None

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonym(s) : Radicalisin
Formula : $C_{30}H_{22}O_{10}$
Molecular weight : 542.49 g/mol

Hazardous components

Component	Classification	Concentration
(+)-Rugulosin		
CAS Number [23537-16-8]	-	≤ 100%
EC Number Not available		

SECTION 4: FIRST-AID MEASURES

4.1 Description of first-aid measures

General information

Consult a doctor/physician if exposed - additional medical care may be required. Show this safety data sheet to the medical provider.

If inhaled

If inhaled, move to fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash skin thoroughly with soap and water. Remove any contaminated clothing. Consult a physician.

In case of eye contact

Flush eye with water. After initial flush, remove any contact lenses and continue flushing for at least 15 minutes.

If swallowed

Rinse mouth with water. Immediately call a doctor, physician, or poison control center. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms/effects, acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.

4.3 Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable extinguishing media

No data available

5.2 Special hazards arising from the substance or mixture

Hazardous Combustion Products

Carbon oxides

5.3 Advice for firefighters

Wear self-contained breathing apparatus if necessary.

5.4 Further information

No data available

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed in Section 7 and 8. Use personal protective equipment. Avoid breathing dust, vapors, mist or gas. Avoid direct contact with spilled substances. Ensure adequate ventilation. Avoid dust formation. For personal protection see Section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

Refer to section 8 for exposure control and personal protection. Refer to section 13 for disposal information.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

Avoid contact with skin and eyes.

For precautionary statements see section 2.2

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Protect from humidity.

Recommended storage temperature: -20 °C

Incompatibilities:

Strong oxidizing agents

7.3 Specific end use(s)

Refer to section 1.2

SECTION 8: EXPOSURE CONTROLS/ PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters:

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls:

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling this product.

Personal Protective Equipment (PPE):

Respiratory protection

Wear respiratory protection. Use type N95 (US) or type P1 (EN 143) dust masks as a backup to engineering controls. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal techniques to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye/Face protection

Wear eye protection. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

Body protection

Wear protective clothing. The type of protective equipment must be selected according to the concentration of the dangerous substance at the specific work place.

Environmental exposure controls

Do not let product enter drains. Discharge into the environment must be avoided.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	:	Yellow-brown solid
Odor	:	No data available
Odor Threshold	:	No data available
pH	:	No data available
Melting Point/Freezing Point	:	No data available
Initial Boiling Point and Range	:	No data available
Flash Point	:	No data available
Evaporation rate	:	No data available
Flammability (solid, gas)	:	No data available
Upper/Lower Flammability or Explosive Limits	:	No data available
Vapour Pressure	:	No data available
Vapour Density	:	No data available
Relative Density	:	No data available
Solubility(ies)	:	Soluble in methanol, ethanol, DMF or DMSO. Limited water solubility.
Partition Coefficient: n-octanol/water	:	No data available
Auto-Ignition Temperature	:	No data available
Decomposition Temperature	:	No data available
Viscosity	:	No data available
Explosive Properties	:	No data available
Oxidising Properties	:	No data available

9.2 Other safety information

No data available

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

No data available

10.5 Incompatible materials

Strong oxidizing agents

10.6 Hazardous decomposition products

No data available

See Section 5 for hazardous combustion products.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute Toxicity

Oral LD ₅₀	:	Mouse: >4 g/kg
Intraperitoneal LD ₅₀	:	Rat: 44 mg/kg, Mouse: 55 mg/kg

Skin Corrosion/Irritation

No data available

Serious Eye Damage/ Eye Irritation

No data available

Respiratory or Skin Sensitization

No data available

Germ Cell Mutagenicity

Bacteria - Salmonella typhimurium: Mutation in microorganisms, 18 mg/L/7H

Bacteria - Bacillus subtilis: DNA repair, 20 µg/disc

Yeast - Saccharomyces cerevisiae: Mutation in microorganisms, 100 µmol/L

Carcinogenicity

This product is or contains a component that has been reported to be not classifiable as to its carcinogenicity to humans based on its IARC, OSHA, ACGIH, NTP, or EPA classification.

IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans ((+)-Rugulosin)

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by the National Toxicology Program.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by the Occupational Health and Safety Association.

Oral TDLo: Mouse, 4400 mg/kg/1Y-C

Toxic Effects: Liver - Tumors

Reproductive Toxicity

No data available

Specific Target Organ Toxicity: Single Exposure

No data available

Specific Target Organ Toxicity: Repeated Exposure

No data available

Aspiration Hazard

No data available

Additional Information

RTECS: VM1610000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12: ECOLOGICAL INFORMATION**12.1 Toxicity**

No data available

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

12.6 Other adverse effects

No data available

In the absence of complete ecological information, treat product as environmentally hazardous.

Use proper storage, handling, and disposal to prevent unintentional release into the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Offer surplus and non-recyclable products to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Avoid disposal of material in drains or sewers.

Contaminated Packaging

Dispose of as unused product.

SECTION 14: TRANSPORT INFORMATION

DOT (US)

Not dangerous goods

IMDG

Not dangerous goods

IATA

Not dangerous goods

SECTION 15: REGULATORY INFORMATION

SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 313.

SARA 311/312 Hazards

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 311/312.

Massachusetts Right to Know

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right to Know

No components are subject to the Pennsylvania Right to Know Act.

New Jersey Right to Know

No components are subject to the New Jersey Right to Know Act.

California Prop. 65 Components

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

SECTION 16: OTHER INFORMATION

Further information

Revision Date: 2019-12-19

The above information is based upon the present state of our knowledge and is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information is believed to be correct but does not purport to be all inclusive. It does not represent any guarantees of the properties of the product. TOKU-E Company shall not be held liable for damage or injury resulting from contact, handling, or storage of the above product.