

**1 Identification**

- **Product identifier**
- **Trade name:** Rotenone
- **Article number:** 150154
- **CAS Number:**  
83-79-4
- **EC number:**  
201-501-9
- **Index number:**  
650-005-00-2
- **Molecular Formula**  $C_{23}H_{22}O_6$
- **Molecular Weight** 394.43 g/mol
- **Application of the substance / the mixture** Research use only.
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
MP Biomedicals, LLC  
29525 Fountain Parkway  
Solon, OH 44139  
United States  
www.mpbio.com
- **Information department:** Product safety department
- **Emergency telephone number:** CHEMTREC: 1-800-424-9300 (1-703-527-3887)

**2 Hazard(s) identification**

- **Classification of the substance or mixture**



GHS06 Skull and crossbones

Acute Tox. 3 H301 Toxic if swallowed.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2A H319 Causes serious eye irritation.

STOT SE 3 H335 May cause respiratory irritation.

- **Label elements**

- **GHS label elements**

The substance is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms**



GHS06



GHS07

- **Signal word** Danger

- **Hazard statements**

Toxic if swallowed.

Causes skin irritation.

Causes serious eye irritation.

May cause respiratory irritation.

- **Precautionary statements**

Avoid breathing dust/fume/gas/mist/vapors/spray

Wear protective gloves.

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Wear eye protection / face protection.  
 Wash thoroughly after handling.  
 Do not eat, drink or smoke when using this product.  
 Use only outdoors or in a well-ventilated area.  
 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.  
 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 Specific treatment (see on this label).  
 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
 Call a POISON CENTER/doctor if you feel unwell.  
 If skin irritation occurs: Get medical advice/attention.  
 If eye irritation persists: Get medical advice/attention.  
 Rinse mouth.  
 IF ON SKIN: Wash with plenty of water.  
 Take off contaminated clothing and wash it before reuse.  
 Store locked up.  
 Store in a well-ventilated place. Keep container tightly closed.  
 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



· **HMIS-ratings (scale 0 - 4)**



· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

### 3 Composition/information on ingredients

· **Chemical characterization: Substances**

· **CAS No. Description**

83-79-4 Rotenone

· **Identification number(s)**

· **EC number:** 201-501-9

· **Index number:** 650-005-00-2

### 4 First-aid measures

· **Description of first aid measures**

· **General information:**

Immediately remove any clothing soiled by the product.

In case of irregular breathing or respiratory arrest provide artificial respiration.

· **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.

· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.

· **After eye contact:**

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

· **After swallowing:** Do not induce vomiting; immediately call for medical help.

· **Information for doctor:**

· **Most important symptoms and effects, both acute and delayed** No further relevant information available.

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- **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

### 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**  
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:** No special measures required.
- **Methods and material for containment and cleaning up:**  
Dispose contaminated material as waste according to item 13.  
Ensure adequate ventilation.
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

### 7 Handling and storage

- **Handling:**
- **Precautions for safe handling**  
Thorough dedusting.  
Ensure good ventilation/exhaustion at the workplace.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:** 15-30 °C
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**  
Store in nitrogen.  
Protect from exposure to the light.  
Keep receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

### 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**

- **Components with limit values that require monitoring at the workplace:**

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PEL	Long-term value: 5 mg/m <sup>3</sup>
REL	Long-term value: 5 mg/m <sup>3</sup>
TLV	Long-term value: 5 mg/m <sup>3</sup>

- **Additional information:** The lists that were valid during the creation were used as basis.

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- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
 Keep away from foodstuffs, beverages and feed.  
 Immediately remove all soiled and contaminated clothing.  
 Wash hands before breaks and at the end of work.  
 Avoid contact with the eyes and skin.
- **Breathing equipment:**  
 In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
 Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.  
 Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**  
 The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
- **Penetration time of glove material**  
 The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:**



Tightly sealed goggles

## 9 Physical and chemical properties

- **Information on basic physical and chemical properties**
- **General Information**
- **Appearance:**

Form:	Powder
Color:	Whitish
Odor:	Indeterminate
Odor threshold:	Not determined.
- **pH-value:** Not applicable.
- **Change in condition**

Melting point/Melting range:	165 - 166 °C (329 - 331 °F)
Boiling point/Boiling range:	210 - 220 °C (410 - 428 °F)
- **Flash point:** Not applicable.
- **Flammability (solid, gaseous):** Product is not flammable.
- **Ignition temperature:**
- **Decomposition temperature:** Not determined.
- **Auto igniting:** Not determined.
- **Danger of explosion:** Product does not present an explosion hazard.

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- |  |                 |
|--|-----------------|
| · <b>Explosion limits:</b>   |                 |
| Lower:   | Not determined. |
| Upper:   | Not determined. |
| · <b>Vapor pressure:</b> Not applicable.                                   |                 |
| · <b>Density at 20 °C (68 °F):</b> 1.27 g/cm <sup>3</sup> (10.598 lbs/gal) |                 |
| · <b>Relative density</b> Not determined.                                  |                 |
| · <b>Vapor density</b> Not applicable.                                     |                 |
| · <b>Evaporation rate</b> Not applicable.                                  |                 |
| · <b>Solubility in / Miscibility with</b> -                                |                 |
| · <b>Partition coefficient (n-octanol/water):</b> Not determined.          |                 |
| · <b>Viscosity:</b>  |                 |
| Dynamic:   | Not applicable. |
| Kinematic:   | Not applicable. |
| · <b>Other information</b> No further relevant information available.      |                 |

## 10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

### · LD/LC50 values that are relevant for classification:

Oral	LD50	60 mg/kg (rat)
Dermal	LD50	1000 mg/kg (rabbit)

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
- **Carcinogenic categories**
- **IARC (International Agency for Research on Cancer)** Substance is not listed.
- **NTP (National Toxicology Program)** Substance is not listed.
- **OSHA-Ca (Occupational Safety & Health Administration)** Substance is not listed.

## 12 Ecological information

- **Toxicity**

### · Aquatic toxicity:

Oral	LC50 / 96 h	0.41 - 0.6 mg/L (Carassius auratus)
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- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.

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- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:** Not known to be hazardous to water.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

## 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

## 14 Transport information

- |   |  |
|---|--|
| · <b>UN-Number</b>  | UN2811   |
| · <b>DOT, ADR, IMDG, IATA</b>   |  |
| · <b>UN proper shipping name</b>  | Toxic solids, organic, n.o.s. (Rotenone)                                 |
| · <b>DOT, IATA</b>  | 2811 Toxic solids, organic, n.o.s. (Rotenone), ENVIRONMENTALLY HAZARDOUS |
| · <b>ADR</b>  | TOXIC SOLID, ORGANIC, N.O.S. (Rotenone), MARINE POLLUTANT                |
| · <b>IMDG</b>   |  |
| · <b>Transport hazard class(es)</b>   |  |
| · <b>DOT</b>  |  |
|  |  |
| · <b>Class</b>  | 6.1 Toxic substances   |
| · <b>Label</b>  | 6.1  |
| · <b>ADR, IMDG</b>  |  |
|  |  |
| · <b>Class</b>  | 6.1 Toxic substances   |
| · <b>Label</b>  | 6.1  |
| · <b>IATA</b>   |  |
|  |  |
| · <b>Class</b>  | 6.1 Toxic substances   |
| · <b>Label</b>  | 6.1  |
| · <b>Packing group</b>  | III  |
| · <b>DOT, ADR, IMDG, IATA</b>   |  |

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· <b>Environmental hazards:</b>	Environmentally hazardous substance, solid; Marine Pollutant
· <b>Marine pollutant:</b>	Yes (DOT)
	Symbol (fish and tree)
· <b>Special marking (ADR):</b>	Symbol (fish and tree)
· <b>Special precautions for user</b>	Warning: Toxic substances
· <b>EMS Number:</b>	F-A,S-A
· <b>Stowage Category</b>	A
· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
· <b>Transport/Additional information:</b>	
· <b>DOT</b>	
· <b>Quantity limitations</b>	On passenger aircraft/rail: 100 kg On cargo aircraft only: 200 kg
· <b>Remarks:</b>	Special marking with the symbol (fish and tree).
· <b>ADR</b>	
· <b>Excepted quantities (EQ)</b>	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g
· <b>IMDG</b>	
· <b>Limited quantities (LQ)</b>	5 kg
· <b>Excepted quantities (EQ)</b>	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g
· <b>UN "Model Regulation":</b>	UN 2811 TOXIC SOLIDS, ORGANIC, N.O.S. (ROTENONE), 6.1, III, ENVIRONMENTALLY HAZARDOUS

## 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Sara**
- **Section 355 (extremely hazardous substances):** Substance is not listed.
- **Section 313 (Specific toxic chemical listings):** Substance is not listed.
- **TSCA (Toxic Substances Control Act):** Substance is not listed.
- **Proposition 65**
- **Chemicals known to cause cancer:** Substance is not listed.
- **Chemicals known to cause reproductive toxicity for females:** Substance is not listed.
- **Chemicals known to cause reproductive toxicity for males:** Substance is not listed.
- **Chemicals known to cause developmental toxicity:** Substance is not listed.
- **Carcinogenic categories**
- **EPA (Environmental Protection Agency)** Substance is not listed.

### · TLV (Threshold Limit Value established by ACGIH)

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A4

- **NIOSH-Ca (National Institute for Occupational Safety and Health)** Substance is not listed.
- **GHS label elements**  
The substance is classified and labeled according to the Globally Harmonized System (GHS).

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**· Hazard pictograms**

GHS06 GHS07

**· Signal word** *Danger***· Hazard statements***Toxic if swallowed.**Causes skin irritation.**Causes serious eye irritation.**May cause respiratory irritation.***· Precautionary statements***Avoid breathing dust/fume/gas/mist/vapors/spray**Wear protective gloves.**Wear eye protection / face protection.**Wash thoroughly after handling.**Do not eat, drink or smoke when using this product.**Use only outdoors or in a well-ventilated area.**IF SWALLOWED: Immediately call a POISON CENTER/ doctor.**If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.**Specific treatment (see on this label).**IF INHALED: Remove person to fresh air and keep comfortable for breathing.**Call a POISON CENTER/doctor if you feel unwell.**If skin irritation occurs: Get medical advice/attention.**If eye irritation persists: Get medical advice/attention.**Rinse mouth.**IF ON SKIN: Wash with plenty of water.**Take off contaminated clothing and wash it before reuse.**Store locked up.**Store in a well-ventilated place. Keep container tightly closed.**Dispose of contents/container in accordance with local/regional/national/international regulations.***· Chemical safety assessment:** *A Chemical Safety Assessment has not been carried out.*

## 16 Other information

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

**· Department issuing SDS:** *Product safety department***· Date of preparation / last revision** 01/04/2016 / -**· Abbreviations and acronyms:**

*ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)*

*IMDG: International Maritime Code for Dangerous Goods*

*DOT: US Department of Transportation*

*IATA: International Air Transport Association*

*ACGIH: American Conference of Governmental Industrial Hygienists*

*EINECS: European Inventory of Existing Commercial Chemical Substances*

*CAS: Chemical Abstracts Service (division of the American Chemical Society)*

*NFPA: National Fire Protection Association (USA)*

*HMIS: Hazardous Materials Identification System (USA)*

*LC50: Lethal concentration, 50 percent*

*LD50: Lethal dose, 50 percent*

*PBT: Persistent, Bioaccumulative and Toxic*

*vPvB: very Persistent and very Bioaccumulative*

*NIOSH: National Institute for Occupational Safety*

*OSHA: Occupational Safety & Health*

*TLV: Threshold Limit Value*

*PEL: Permissible Exposure Limit*

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*REL: Recommended Exposure Limit**Acute Tox. 3: Acute toxicity, Hazard Category 3**Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2**Eye Irrit. 2A: Serious eye damage/eye irritation, Hazard Category 2A**STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3*

US