

## SPI Supplies Division

Structure Probe, Inc.

206 Garfield Ave., West Chester, PA 19380-4512 USA

Phone: 1-(610)-436-5400 Fax: 1-(610)-436-5755

[sales@2spi.com](mailto:sales@2spi.com)

<http://www.2spi.com>

Manufacturer's CAGE: 1P573

## Safety Data Sheet

Date Effective: January 3, 2018

SPI Catalog # 02571-AB

SPI-Chem™ Malachite Green (Basic Green 4)

### Section 1.1: Identification

Chemical Name/Synonyms ..... Malachite Green; Malachite Green oxalate; Basic Green 4

Product or Trade Name ..... SPI-Chem™ Malachite Green (Basic Green 4)

CAS #'s ..... 2437-29-8

Chemical Formula.....  $C_{46}H_{50}N_4 \cdot 2C_2HO_4 \cdot C_2H_2O_4$

Molecular weight: ..... 927.01 grams/mole

### Section 1.2: Relevant Uses/Restrictions

Chemical stain for light microscopy applications.

For Research and Development Use only.

Not for use for Manufacturing or Commercial Purposes.

### Section 1.3: Supplier of the Safety Data Sheet

**SPI Supplies Division**

**Structure Probe, Inc.**

206 Garfield Ave., West Chester, PA 19380-4512 USA

Phone: 1-(610)-436-5400 Fax: 1-(610)-436-5755

[sales@2spi.com](mailto:sales@2spi.com)

<http://www.2spi.com>

Manufacturer's CAGE: 1P573

### Section 1.4: Emergency telephone number

Emergencies

Contacting CHEMTREC:

24 Hour Emergency Use Only #'s...

Worldwide phone: 1-(703)-741-5970

Toll-free phone: 1-(800)-424-9300 USA + Canada only

### Section 2: Hazard Identification

#### 2.1 Classification of the substance

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute oral toxicity (category 3)  
Serious eye damage/Eye irritation (category 1)  
Reproductive toxicity (category 2)

## 2.2 Label elements

### Pictogram



**Signal Word:** Danger

### Hazard statements:

- H301 Toxic if swallowed.
- H318 Causes serious eye damage.
- H361 Suspected of damaging fertility or the unborn child.

### Precautionary statements:

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P264 Wash skin thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P280 Wear protective gloves/ eye protection/ face protection.
- P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER / doctor.
- P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P310 Immediately call a POISON CENTER / doctor.
- P321 Specific treatment (see supplemental first aid instructions on this label).
- P330 Rinse mouth.
- P405 Store locked up.
- P501 Dispose of contents/ container to an approved waste disposal plant.

Unknown percentage statements (if needed):

### 2.3 Other Hazards: None known.

#### Hazardous Material Information System USA

Health ..... 2  
Fire Hazard ..... 0  
Reactivity ..... 0  
Personal Protection .....

#### NFPA Rating (estimated)

Health ..... 2  
Flammability..... 0  
Reactivity ..... 0

## Section 3: Composition

### 3.1 Substances:

Malachite Green (Basic Green 4)      CAS # 2437-29-8       $C_{46}H_{50}N_4 \cdot 2C_2H_0_4 \cdot C_2H_2O_4$       90-100 %

## **Section 4: First Aid Measures**

### **4.1 Description of first aid measures:**

**Inhalation:** Move to fresh air. If breathing is difficult, give oxygen. Seek medical attention immediately if symptoms occur.

**Skin Contact:** Wash off immediately with plenty of water for at least 15 minutes. Seek medical attention immediately if symptoms occur.

**Eye Contact:** After eye contact, immediately rinse out with plenty of water. Immediately call in an ophthalmologist.

**Ingestion:** Do not induce vomiting. Call a physician or POISON CONTROL CENTER immediately

**4.2 Most important symptoms and effects, both acute and delayed:** Causes eye burns.

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

Note to physician: Treat symptomatically.

## **Section 5: Fire Fighting Measures**

### **5.1 Extinguishing media:**

Suitable extinguishing media: Water, Foam, Carbon dioxide (CO<sub>2</sub>), Dry powder

### **5.2 Special hazards arising from the substance or mixture:**

Combustible.

Development of hazardous combustion gases or vapors possible in the event of fire.

### **Hazardous combustion products:**

Fire may cause evolution of: Nitrogen oxides.

### **5.3 Advice for firefighters:**

Suppress (knock down) gases/ vapors/ mists with a water spray jet.

Prevent fire extinguishing water from contaminating surface water or the ground water system.

### **Special protective equipment and precautions for firefighters:**

Stay in danger area only with self-contained breathing apparatus.

Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

## **Section 6: Accidental Release Measures**

### **6.1 Personal precautions:**

Avoid inhalation of dusts.

Avoid substance contact.

Ensure adequate ventilation.

Evacuate the danger area, observe emergency procedures, consult an expert.

For protective equipment, see Section 8.

### **6.2 Environmental precautions:**

Do not let product enter drains.

### **6.3 Methods and material for containment and cleaning up:**

- Cover drains.
- Collect, bind, and pump off spills.
- Observe possible material restrictions (see Sections 7 and 10).
- Take up carefully.
- Dispose of properly.
- Clean up affected areas.
- Avoid generation of dusts.

### **6.4 Reference to other sections:**

- See Section 8 for Personal Protective Equipment.
- See Sections 7 and 10 for possible material restrictions.

## ***Section 7: Handling and Storage***

### **7.1 Precautions for safe handling:**

- Observe label precautions.

### **7.2 Conditions for safe storage, including any incompatibilities:**

- Keep container tightly closed.
- Keep in well-ventilated place.
- Keep locked up or in an area accessible only to qualified or authorized person.
- Store at +5 °C to +30 °C (+41 °F to +86 °F).

### **7.3 Specific end uses**

- Chemical stain for light microscopy applications.
- This material is not being offered for clinical or diagnostic applications, agricultural uses or for human or animal consumption.

## ***Section 8: Exposure Controls and Personal Protection***

### **8.1 Control parameter and Personal Protection:**

#### **Workplace exposure limits:**

- Contains no substances with occupational exposure limit values.

#### **Biological limit values:**

- No additional information available.

### **8.2 Exposure controls:**

#### **8.2.1 Appropriate engineering controls:**

- Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

#### **8.2.2 Individual protection measures:**

- Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

#### Hygiene measures:

- Change contaminated clothing.
- Preventive skin protection recommended.
- Wash hands after working with substance.

Eye/face protection:

Tightly fitting safety goggles.

Hand protection:

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products, if a risk assessment indicates this is necessary.

Other protective equipment:

Protective clothing to prevent contact with chemical.

Respiratory protection:

Required where dusts are generated.

**8.2.3 Environmental exposure controls:**

Prevent further leakage or spillage if safe to do so.

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:** solid, green

**Odor:** weak characteristic odor

**Odor threshold:** no information available

**pH:** 2.4 at 10 g/l (75 °F (24 °C))

**Melting point/Freezing point:** ca. 318 °F (159 °C)

**Boiling point/Boiling point range:** no information available

**Flash Point:** no information available

**Evaporation rate:** no information available

**Flammability (solid, gas):** no information available

**Upper/lower flammability or explosive limits:** no information available

**Vapor Pressure:** no information available

**Vapor density:** no information available

**Relative density:** no information available

**Water Solubility:** 110 g/l at 75 °F (24 °C)

**Partition coefficient (n-octanol/water):** no information available

**Auto-ignition temperature:** no information available

**Decomposition temperature:** no information available

**Viscosity:** no information available

**Explosive properties:** not classified as explosive

**Oxidizing Properties:** none

**Bulk density:** ca. 400-500 kg/m<sup>3</sup>

**9.2 Other information:** No further relevant information 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:**

Violent reactions possible with: strong oxidizing agents.

### **10.4 Conditions to avoid:**

Incompatible products; Dust formation

### **10.5 Incompatible materials:**

Strong oxidizing agents; Strong bases; Strong reducing agents.

### **10.6 Hazardous decomposition products:**

Nitrogen oxides (NO<sub>x</sub>), Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>).  
In the event of fire, see Section 5.

## **Section 11: Toxicological Information**

### **Information on the likely routes of exposure:**

Eye contact, Skin contact, Ingestion

### **11.1 Information on toxicological effects:**

#### **A. Acute toxicity:**

LD50 Rat, oral 275 mg/kg (Lit.)

#### **B. Skin corrosion/irritation:**

No information available.

#### **C. Serious eye damage/irritation:**

Causes severe eye irritation and possible burns.

#### **D. Respiratory or skin sensitization:**

No information available.

#### **E. Germ cell mutagenicity:**

No information available.

#### **F. Carcinogenicity:**

IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible, or confirmed human carcinogen by IARC.

OSHA: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP>

ACGIH: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

**G. Reproductive toxicity:**

Suspected human reproductive toxicant.  
Suspected of damaging the unborn child.

**H. STOT-single exposure:**

No information available.

**I..STOT-repeated exposure:**

No information available.

**J. Aspiration hazard:**

No information available.

**Further information:**

After absorption: Damage to Liver, Kidney, Cardiac system.

The following applies to aromatic amines in general:

Systemic effect:

Methemoglobinemia with headache, cardiac dysthythmia, drop in blood pressure, dyspnea, and spasms.

Principal symptom: Cyanosis (blue discoloration of the blood).

This substance should be handled with particular care.

## **Section 12: Ecological Information**

**12.1 Toxicity:**

Toxicity to fish:

LC50 Ictalurus catus (catfish): 0.14 mg/l; 96 h [ECOTOX database]

Toxicity to daphnia and other aquatic invertebrates:

EC50 Daphnia magna (water flea) 0.29 mg/l; 48 h [ECOTOX database]

Toxicity to bacteria:

EC50 Sewage sludge: 10-100 mg/l OECD Test Guideline 209

**12.2 Persistence and degradability:**

No information available.

**12.3 Bio-accumulative potential:**

No information available.

**12.4 Mobility in soil:**

No information available.

**12.5 Results of PBT and vPvB assessment:**

Not available as chemical safety assessment not required / not conducted.

**12.6 Other adverse effects:**

Very toxic to aquatic life.

## **Section 13: Disposal Considerations**

### **13.1 Waste treatment methods:**

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

Offer surplus and non-recyclable solutions to a licensed disposal company. Dispose of contaminated packaging as unused product.

## **Section 14: Transport Information**

### **DOT:**

UN number: UN 2811  
Proper shipping name: TOXIC SOLID, ORGANIC, N.O.S. (MALACHITE GREEN OXALATE)  
Class: 6.1  
Packing group: III  
Environmentally hazardous: --

### **IATA:**

UN Number: UN 2811  
Proper shipping name: TOXIC SOLID, ORGANIC, N.O.S. (MALACHITE GREEN OXALATE)  
Class: 6.1  
Packing group: III  
Environmentally hazardous: --  
Special precautions for user: no

### **IMDG:**

UN Number: UN 2811  
Proper shipping name: TOXIC SOLID, ORGANIC, N.O.S. (MALACHITE GREEN OXALATE)  
Class: 6.1  
Packing group: III  
Environmentally hazardous: --  
Special precautions for user: yes  
EmS: F-A S-A

## **Section 15: Regulatory Information**

15.1 Safety, health and environmental regulations/ legislation specific for the substance or mixture

### **United States of America**

#### **SARA 313:**

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

#### **SARA 302:**

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

#### **CLEAN WATER ACT:**

This product does not contain any Hazardous Substances listed under the U.S. Clean Water Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Substances listed under the U.S. Clean Water Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act, Section 307.



**DEA List I:** Not listed.

**DEA List II:** Not listed.

**US State Regulations:**

**Massachusetts Right To Know:** No components are subject to the Massachusetts Right to Know Act.

**California Prop 65 Components:** This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

**Notification status:**

**TSCA:**

Not listed on TSCA Inventory.  
For Research and Development Use only.  
Not for use for Manufacturing or Commercial Purposes.

**DSL:**

All components of this product are on the Canadian DSL.

**15.2 Chemical Safety Assessment:** Chemical safety assessment not required / not conducted.

Date of Preparation: 03 January 2018.

**Abbreviations and acronyms**

IMDG: International Maritime Code for Dangerous Goods  
DOE: Drug Enforcement Agency  
DOT: US Department of Transportation  
CMRG: Chemical Manufacturer's Recommended Guidelines  
IATA: International Air Transport Association  
ACGIH: American Conference of Governmental Industrial Hygienists  
AIHA: American Industrial Hygiene Association  
EINECS: European Inventory of Existing Commercial Chemical Substances  
ELINCS: European List of Notified 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, Bio-accumulative and Toxicological  
vPvB: very Persistent and very Bio-accumulative  
NIOSH: National Institute for Occupational Safety  
OSHA: Occupational Safety Health  
ATE: Acute Toxicity Estimates  
TLV: Threshold Limit Value  
PEL: Permissible Exposure Limit  
REL: Recommended Exposure Limit  
STEL: Short Term Exposure Limit  
CEIL: Ceiling

**Section 16: Other Information**

**Disclaimer of Liability:**

Caution! Do not use SPI Supplies products or materials in applications involving implantation within the body; direct or indirect contact with the blood pathway; contact with bone, tissue, tissue fluid, or blood; or prolonged contact with mucous membranes. Products offered by SPI Supplies are not designed or manufactured for use in implantation in the human body or in contact with internal body fluids or tissues. SPI Supplies will not provide to customers making devices for such applications any notice, certification, or information necessary for such medical device use required by US FDA (Food and Drug Administration) regulation or any other statute. SPI Supplies and Structure Probe, Inc. make no representation, promise, express warranty or implied warranty concerning the suitability of these materials for use in implantation in the human body or in contact with internal body tissues or fluids.

The information and recommendations set forth above are taken from sources believed to be accurate as of the date hereof, however SPI Supplies and Structure Probe, Inc. make no warranty with respect to the accuracy of the information or the suitability of the recommendations, and assume no liability to any user thereof. The information contained in this sheet does not constitute a hazard assessment and should not be used in place of the user's own assessment of work place risks as required by other health and safety legislation. Be aware of the Structure Probe, Inc. Copyright Policy. Structure Probe, Inc. grants a nonexclusive license to make unlimited copies of this safety sheet for internal use only. Quite obviously, this information would pertain only to this material when purchased from SPI Supplies as product from other sources, with other ingredients and impurity levels could have substantially different properties.