

BIOL-232 – Microbiology

List of Chemicals used in Lab

Immersion Oil

Methylene Blue

Malachite Green

Indole Reagent

Voges-Proskauer A

Voges Proskauer B

Methyl Red

Isopropyl Alcohol

Crystal Violet

Saffranin

Iodine Gram Stain

Acetone

FLINN SCIENTIFIC, INC.

Safety Data Sheet (SDS)

SDS #: 7.00

Revision Date: May 30, 2014

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

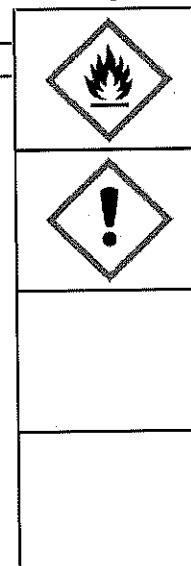
Acetone

Flinn Scientific, Inc. P.O. Box 219, Batavia, IL 60510 (800) 452-1261

CHEMTREC Emergency Phone Number: (800) 424-9300

Signal Word **DANGER**

Pictograms



SECTION 2 — HAZARDS IDENTIFICATION

Hazard class: Flammable liquids (Category 2). Highly flammable liquid and vapor (H225). Keep away from heat, sparks, open flames, and hot surfaces. No smoking (P210).

Hazard class: Serious eye damage or irritation (Category 2A). Causes serious eye irritation (H319).

Hazard class: Specific target organ toxicity, single exposure; Narcotic effects (Category 3). May cause drowsiness or dizziness (H336). Avoid breathing mist, vapors or spray (P261).

SECTION 3 — COMPOSITION, INFORMATION ON INGREDIENTS

Component Name	CAS Number	Formula	Formula Weight	Concentration
Acetone	67-64-1	CH ₃ COCH ₃	58.08	
Synonyms: Dimethyl ketone, 2-Propanone				

SECTION 4 — FIRST AID MEASURES

Call a POISON CENTER or physician if you feel unwell (P312).

If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing (P304+P340).

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing (P305+P351+P338). **If eye irritation persists:** Get medical advice or attention (P337+P313).

If on skin: Wash with plenty of water.

If swallowed: Rinse mouth. Call a POISON CENTER or physician if you feel unwell.

SECTION 5 — FIRE FIGHTING MEASURES

Class 1B flammable liquid.

A dangerous fire hazard from heat, flame or strong oxidizers.

Flash point: -17 °C (CC) Flammable limits: Upper 12.8% Lower 2.6% Autoignition temperature: 465 °C

When heated to decomposition, may emit toxic fumes.

In case of fire: Use a tri-class dry chemical fire extinguisher (P370+P378).

NFPA CODE

H-1

F-3

R-0

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Remove all ignition sources and ventilate area. Contain the spill with sand or other inert absorbent material and deposit in a sealed bag or container. See Sections 8 and 13 for further information.

SECTION 7 — HANDLING AND STORAGE

Flinn Suggested Chemical Storage Pattern: Organic #4. Store with ethers, ketones, halogenated hydrocarbons and ethylene oxide. Store in a dedicated flammables cabinet. If a flammables cabinet is not available, store in Flinn Saf-Stor™ can. Keep container tightly closed (P233). Keep cool (P235). Use only in a hood or well-ventilated area (P271). Take precautionary measures against static discharge (P243).

SECTION 8 — EXPOSURE CONTROLS, PERSONAL PROTECTION

Wear protective gloves, protective clothing, and eye protection (P280). Use latex, not nitrile gloves. Wash hands thoroughly after handling (P264). Use only in a hood or well-ventilated area (P271).
Exposure guidelines: PEL 1000 ppm (OSHA); TLV 500 ppm, STEL 750 ppm (ACGIH); IDLH 2500 ppm

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Colorless liquid. Sweet pungent odor like nail polish remover.
Soluble: Miscible with water, alcohol and many other organic solvents.

Boiling point: 56.5 °C
Density: 0.79
Melting point: -94.6 °C
Vapor density: 2.00

SECTION 10 — STABILITY AND REACTIVITY

Stable. Potentially explosive reaction with strong oxidizing agents and halogenated compounds.
Shelf life: Good, if stored properly.

SECTION 11 — TOXICOLOGICAL INFORMATION

Acute effects: Eye and respiratory tract irritant, dizziness, CNS depression.
Chronic effects: Dermatitis.
Target organs: Liver, kidneys, CNS, respiratory system.

ORL-RAT LD₅₀: 5800 mg/kg
IHL-RAT LC₅₀: 50,100 mg/m³/8H
SKN-RBT LDLo: 20 mL/kg

N.A. = Not available, not all health aspects of this substance have been fully investigated.

SECTION 12 — ECOLOGICAL INFORMATION

Data not yet available.

SECTION 13 — DISPOSAL CONSIDERATIONS

Please review all federal, state and local regulations that may apply before proceeding.
Flinn Suggested Disposal Method #18a is one option.

SECTION 14 — TRANSPORT INFORMATION

Shipping name: Acetone. Hazard class: 3, Flammable Liquid. UN number: UN1090.

N/A = Not applicable

SECTION 15 — REGULATORY INFORMATION

TSCA-listed, EINECS-listed (200-662-2), RCRA code U002

SECTION 16 — OTHER INFORMATION

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Consult your copy of the *Flinn Science Catalog/Reference Manual* for additional information about laboratory chemicals.

Revision Date: May 30, 2014

FLINN SCIENTIFIC, INC.

Safety Data Sheet (SDS)

SDS #: 276.00

Revision Date: March 21, 2014

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

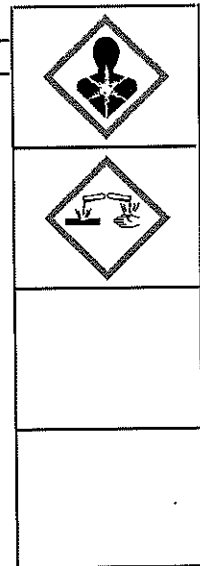
Crystal Violet

Flinn Scientific, Inc. P.O. Box 219, Batavia, IL 60510 (800) 452-1261

CHEMTREC Emergency Phone Number: (800) 424-9300

Signal Word **DANGER**

Pictograms



SECTION 2 — HAZARDS IDENTIFICATION

Hazard class: Acute toxicity, oral (Category 4). Harmful if swallowed (H302). Do not eat, drink or smoke when using this product (P270).

Hazard class: Skin corrosion or irritation (Category 2). Causes skin irritation (H315).

Hazard class: Serious eye damage or irritation (Category 1). Causes serious eye damage (H318).

Hazard class: Carcinogenicity (Category 2). Suspected of causing cancer (H351). Obtain special instructions before use (P201). Do not handle until all safety precautions have been read and understood (P202). Use personal protective equipment as required (P281).

SECTION 3 — COMPOSITION, INFORMATION ON INGREDIENTS

Component Name	CAS Number	Formula	Formula Weight	Concentration
Crystal violet	548-62-9	C ₂₅ H ₃₀ ClN ₃	408.00	
Synonyms: Basic violet 3; Gentian violet; Methyl violet 10B; C.I. 42555				

SECTION 4 — FIRST AID MEASURES

If exposed or concerned: Get medical advice or attention (P308+P313).

If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing (P305+P351+P338).

If on skin: Rinse cautiously with water for several minutes (P351).

If swallowed: Rinse mouth. Call a POISON CENTER or physician if you feel unwell (P301+P330+P312).

SECTION 5 — FIRE FIGHTING MEASURES

Nonflammable solid.

When heated to decomposition, may emit toxic fumes.

In case of fire: Use a tri-class dry chemical fire extinguisher.

NFPA CODE
None
established

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Do not allow solid to become airborne. Ventilate area. Wipe up the spill, place in a sealed bag or container, and dispose. Wash spill site after material pickup is complete. See Sections 8 and 13 for further information.

SECTION 7 — HANDLING AND STORAGE

Flinn Suggested Chemical Storage Pattern: Organic #9. Store with dyes, indicators and stains.
Keep container tightly closed. Store in a cool, dry place.

SECTION 8 — EXPOSURE CONTROLS, PERSONAL PROTECTION

Wear protective gloves, protective clothing, and eye protection (P280). Wash hands thoroughly after handling (P264). Will stain skin, clothing, and surfaces.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Pea green powder. Musty odor.
Soluble: Water and alcohol

Absorbance maximum: 590 nm
Biological stain and as a acid-base indicator.
pH indicator: 0.0 yellow to 1.8 violet-blue.

SECTION 10 — STABILITY AND REACTIVITY

Avoid contact with strong oxidizers.
Shelf life: Indefinite, if stored properly.

SECTION 11 — TOXICOLOGICAL INFORMATION

Acute effects: Toxic, irritant, nausea, headache, and vomiting
Chronic effects: Mutagen
Target organs: N.A.

ORL-RAT LD₅₀: 420 mg/kg
IHL-RAT LC₅₀: N.A.
SKN-RBT LD₅₀: N.A.

N.A. = Not available, not all health aspects of this substance have been fully investigated.

SECTION 12 — ECOLOGICAL INFORMATION

Data not yet available.

SECTION 13 — DISPOSAL CONSIDERATIONS

Please review all federal, state and local regulations that may apply before proceeding.
Flinn Suggested Disposal Method #26a is one option.

SECTION 14 — TRANSPORT INFORMATION

Shipping name: Not regulated. Hazard class: N/A. UN number: N/A.

N/A = Not applicable

SECTION 15 — REGULATORY INFORMATION

TSCA-listed, EINECS-listed (208-953-6).

SECTION 16 — OTHER INFORMATION

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Revision Date: March 21, 2014

FLINN SCIENTIFIC, INC.

Safety Data Sheet (SDS)

SDS #: 401.50

Revision Date: March 21, 2014

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Immersion Oil, High and Low Viscosity

Flinn Scientific, Inc. P.O. Box 219, Batavia, IL 60510 (800) 452-1261

CHEMTREC Emergency Phone Number: (800) 424-9300

Signal Word **WARNING**

Pictograms



SECTION 2 — HAZARDS IDENTIFICATION

Hazard class: Skin and serious eye damage, corrosion or irritation (Category 2, 2A). Causes skin and serious eye irritation (H315+H319).

Hazard class: Specific target organ toxicity, single exposure; respiratory tract irritation (Category 3). May cause respiratory irritation (H335). Avoid breathing mist, vapors or spray (P261).

SECTION 3 — COMPOSITION, INFORMATION ON INGREDIENTS

Component Name	CAS Number	Formula	Formula Weight	Concentration
Immersion oil	None established	Proprietary	Proprietary	
Synonym: Cargille Type A or Type B				

SECTION 4 — FIRST AID MEASURES

Call a POISON CENTER or physician if you feel unwell (P312).

If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing (P304+P340). **If aspirated into lungs:** Immediately call a POISON CENTER or physician. **If in eyes:** Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing (P305+P351+P338). **If eye irritation persists:** Get medical advice or attention (P337+P313). **If on skin:** Wash with plenty of water (P302+P352). **If skin irritation occurs:** Get medical advice or attention (P332+P313). **If swallowed:** Do NOT induce vomiting. Call a POISON CENTER or physician if you feel unwell.

SECTION 5 — FIRE FIGHTING MEASURES

Combustible when exposed to heat or flame.

Flash point: >163 °C

In case of fire: Use a tri-class dry chemical fire extinguisher.

NFPA CODE
None
established

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Contain the spill with sand or absorbent material and deposit in a sealed bag or container. See Sections 8 and 13 for further information.

SECTION 7 — HANDLING AND STORAGE

Flinn Suggested Chemical Storage Pattern: Organic #3. Store with hydrocarbons, oils, esters and aldehydes. Store away from direct sunlight between 18 and 32 °C. Keep container tightly closed (P233). Use only in a hood or well-ventilated area (P271).

SECTION 8 — EXPOSURE CONTROLS, PERSONAL PROTECTION

Wear protective gloves, protective clothing, and eye protection (P280). Wash hands thoroughly after handling (P264). Use only in a hood or well-ventilated area (P271).
Exposure guidelines: TLV 4.9 mg/m³ as hydrogenated terphenyls (ACGIH)

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Pale yellow or colorless oily liquid. Characteristic odor. Melting point: >300 °C
Soluble: Organic solvents. Insoluble in water.

SECTION 10 — STABILITY AND REACTIVITY

Shelf life: Indefinite, if stored away from direct sunlight, between 18 and 32 °C.

SECTION 11 — TOXICOLOGICAL INFORMATION

Acute effects: Skin, eye, and respiratory tract irritation.	ORL-RAT LD ₅₀ : N.A.
Chronic effects: N.A.	IHL-RAT LC ₅₀ : N.A.
Target organs: N.A.	SKN-RBT LD ₅₀ : N.A.

N.A. = Not available, not all health aspects of this substance have been fully investigated.

SECTION 12 — ECOLOGICAL INFORMATION

Data not yet available.

SECTION 13 — DISPOSAL CONSIDERATIONS

Please review all federal, state and local regulations that may apply before proceeding.
Flinn Suggested Disposal Method #18b is one option.

SECTION 14 — TRANSPORT INFORMATION

Shipping name: Not regulated. Hazard class: N/A. UN number: N/A.

N/A = Not applicable

SECTION 15 — REGULATORY INFORMATION

Not listed.

SECTION 16 — OTHER INFORMATION

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Revision Date: March 21, 2014

FLINN SCIENTIFIC, INC.

Safety Data Sheet (SDS)

SDS #: 412.00

Revision Date: March 25, 2014

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Iodine Solution, Gram

Flinn Scientific, Inc. P.O. Box 219, Batavia, IL 60510 (800) 452-1261

CHEMTREC Emergency Phone Number: (800) 424-9300

Signal Word **WARNING**

Pictograms



SECTION 2 — HAZARDS IDENTIFICATION

Hazard class: Skin and serious eye damage, corrosion or irritation (Category 2, 2B). Causes skin and eye irritation (H315+H320).

SECTION 3 — COMPOSITION, INFORMATION ON INGREDIENTS

Component Name	CAS Number	Formula	Formula Weight	Concentration
Iodine	7553-56-2	I ₂	253.81	<1%
Potassium iodide	7681-11-0	KI	166.01	<1%
Water	7732-18-5	H ₂ O	18.00	>99%

SECTION 4 — FIRST AID MEASURES

Call a POISON CENTER or physician if you feel unwell.

If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing (P305+P351+P338). **If eye irritation persists:** Get medical advice or attention (P337+P313).

If on skin: Wash with plenty of water (P302+P352). **If skin irritation occurs:** Get medical advice or attention (P332+P313).

If swallowed: Rinse mouth. Call a POISON CENTER or physician if you feel unwell.

SECTION 5 — FIRE FIGHTING MEASURES

Nonflammable, noncombustible solution.

In case of fire: Use a tri-class dry chemical fire extinguisher.

NFPA CODE
None
established

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Ventilate area. Contain the spill with sand or absorbent material and deposit in a sealed bag or container. See Sections 8 and 13 for further information.

SECTION 7 — HANDLING AND STORAGE

Flinn Suggested Chemical Storage Pattern: Inorganic #2. Store with acetates, halides, sulfates, sulfites, thiosulfates and phosphates. Store away from heat and direct light.

SECTION 8 — EXPOSURE CONTROLS, PERSONAL PROTECTION

Wear protective gloves, protective clothing, and eye protection (P280). Wash hands thoroughly after handling (P264). Will stain skin, clothing, and surfaces.

Exposure guidelines: (as iodine) Ceiling 0.1 ppm (OSHA); TLV 0.01 ppm (inhalable fraction and vapor) (ACGIH)

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Deep brown liquid. Iodine odor.

Biological stain, Gram formulation.

SECTION 10 — STABILITY AND REACTIVITY

Shelf life: Fair to poor. See Section 7 for further information.

SECTION 11 — TOXICOLOGICAL INFORMATION

Acute effects: Irritant, stomach cramps.

ORL-HUM LD₅₀: 2-4 g as iodine

Chronic effects: N.A.

IHL-RAT LC₅₀: N.A.

Target organs: Thyroid.

SKN-RBT LD₅₀: N.A.

N.A. = Not available, not all health aspects of this substance have been fully investigated.

SECTION 12 — ECOLOGICAL INFORMATION

Data not yet available.

SECTION 13 — DISPOSAL CONSIDERATIONS

Please review all federal, state and local regulations that may apply before proceeding.

Flinn Suggested Disposal Method #12a is one option.

SECTION 14 — TRANSPORT INFORMATION

Shipping name: Not regulated. Hazard class: N/A. UN number: N/A.

N/A = Not applicable

SECTION 15 — REGULATORY INFORMATION

Not listed.

SECTION 16 — OTHER INFORMATION

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Revision Date: March 25, 2014

FLINN SCIENTIFIC, INC.

Safety Data Sheet (SDS)

SDS #: 420.00

Revision Date: March 25, 2014

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Isopropyl Alcohol

Flinn Scientific, Inc. P.O. Box 219, Batavia, IL 60510 (800) 452-1261

CHEMTREC Emergency Phone Number: (800) 424-9300

Signal Word **DANGER**

Pictograms



SECTION 2 — HAZARDS IDENTIFICATION

Hazard class: Flammable liquids (Category 2). Highly flammable liquid and vapor (H225). Keep away from heat, sparks, open flames, and hot surfaces. No smoking (P210).

Hazard class: Skin corrosion or irritation (Category 3). Causes mild skin irritation (H316).

Hazard class: Serious eye damage or irritation (Category 2A). Causes serious eye irritation (H319).

Hazard class: Specific target organ toxicity, single exposure; Narcotic effects (Category 3). May cause drowsiness or dizziness (H336). Avoid breathing mist, vapors or spray (P261).

The single lethal dose for a human adult is about 250 mL, although as little as 100 mL can be fatal. Although isopropyl alcohol is slightly toxic by definition, teachers should be alert to students attempting to drink this "alcohol" on a dare.

SECTION 3 — COMPOSITION, INFORMATION ON INGREDIENTS

Component Name	CAS Number	Formula	Formula Weight	Concentration
Isopropyl alcohol	67-63-0	C ₃ H ₈ O	60.10	
Synonyms: 2-Propanol, Rubbing alcohol				

SECTION 4 — FIRST AID MEASURES

Call a POISON CENTER or physician if you feel unwell (P312).

If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing (P304+P340).

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing (P305+P351+P338). **If eye irritation persists:** Get medical advice or attention (P337+P313).

If on skin (or hair): Immediately remove all contaminated clothing. Rinse skin with water (P303+P361+P353). **If skin irritation occurs:** Get medical advice or attention (P332+P313).

SECTION 5 — FIRE FIGHTING MEASURES

Class IB flammable liquid.

Flash point: 12 °C Flammable limits: Lower: 2.0% Upper: 12.7% Autoignition Temperature: 399 °C

When heated to decomposition, may emit toxic fumes.

In case of fire: Use a tri-class dry chemical fire extinguisher (P370+P378).

NFPA CODE

H-1

F-3

R-0

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Remove all ignition sources and ventilate area. Contain the spill with sand or other inert absorbent material and deposit in a sealed bag or container. See Sections 8 and 13 for further information.

SECTION 7 — HANDLING AND STORAGE

Flinn Suggested Chemical Storage Pattern: Organic #2. Store with alcohols, glycols, amines and amides. Store in a dedicated flammables cabinet. If a flammables cabinet is not available, store in Flinn Saf-Stor™ can. Keep container tightly closed (P233). Keep cool (P235). Use only in a hood or well-ventilated area (P271). Avoid prolonged storage (see Section 10).

SECTION 8 — EXPOSURE CONTROLS, PERSONAL PROTECTION

Wear protective gloves, protective clothing, and eye protection (P280). Wash hands thoroughly after handling (P264). Use only in a hood or well-ventilated area (P271).

Exposure guidelines: PEL 980 mg/m³ (OSHA); TLV 492 mg/m³ Ceiling 984 mg/m³ (ACGIH)

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Clear, colorless liquid. Distinctive odor like rubbing alcohol.

Boiling point: 83 °C

Soluble: Water, alcohol, and ether

Melting point: -889 °C

Specific gravity: 0.8

SECTION 10 — STABILITY AND REACTIVITY

Avoid contact with strong oxidizers, acetaldehyde, chlorine, ethylene oxide, acids, and isocyanates.

Shelf life: Fair. Organic peroxides may develop if exposed to light and air, which can result in explosions, especially when distilled.

Avoid prolonged storage.

SECTION 11 — TOXICOLOGICAL INFORMATION

Acute effects: Serious eye irritant, mild skin irritant, dizziness, drowsiness, nausea, headache.

ORL-RAT LD₅₀: 5045 mg/kg

Chronic effects: N.A.

IHL-RAT LC₅₀: 16,000 ppm/8H

Target organs: Eyes, skin, respiratory system.

SKN-RBT LD₅₀: 12,800 mg/kg

N.A. = Not available, not all health aspects of this substance have been fully investigated.

SECTION 12 — ECOLOGICAL INFORMATION

Data not yet available.

SECTION 13 — DISPOSAL CONSIDERATIONS

Please review all federal, state and local regulations that may apply before proceeding.

Flinn Suggested Disposal Method #18a is one option.

SECTION 14 — TRANSPORT INFORMATION

Shipping name: Isopropyl alcohol. Hazard class: 3, Flammable liquid. UN number: UN1219.

N/A = Not applicable

SECTION 15 — REGULATORY INFORMATION

TSCA-listed, EINECS-listed (200-661-7), RCRA code D001.

SECTION 16 — OTHER INFORMATION

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Revision Date: March 25, 2014

FLINN SCIENTIFIC, INC.

Safety Data Sheet (SDS)

SDS #: 484.00

Revision Date: February 6, 2014

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Malachite Green Aqueous Solution

Flinn Scientific, Inc. P.O. Box 219, Batavia, IL 60510 (800) 452-1261

CHEMTREC Emergency Phone Number: (800) 424-9300

Signal Word N/A

Pictograms

SECTION 2 — HAZARDS IDENTIFICATION

This chemical is considered nonhazardous according to GHS classifications for the Hazard Communication Standard. Treat all laboratory chemicals with caution.

Although this material is considered to be nonhazardous, unpredictable reactions among chemicals are always possible. Prudent laboratory practices should be observed.

SECTION 3 — COMPOSITION, INFORMATION ON INGREDIENTS

Component Name	CAS Number	Formula	Formula Weight	Concentration
Malachite green oxalate	2437-29-8	$C_{46}H_{50}N_4 \cdot 3C_2H_2O_4$	927.03	1%
Water	7732-18-5	H_2O	18.00	99%

SECTION 4 — FIRST AID MEASURES

Call a POISON CENTER or physician if you feel unwell.

If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing.

If on skin: Wash with plenty of water.

If swallowed: Rinse mouth. Call a POISON CENTER or physician if you feel unwell.

SECTION 5 — FIRE FIGHTING MEASURES

Nonflammable, noncombustible solution.

In case of fire: Use a tri-class dry chemical fire extinguisher.

NFPA CODE
None
established

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Sweep up the spill, place in a sealed bag or container, and dispose. Ventilate area and wash spill site after material pickup is complete. See Sections 8 and 13 for further information.

SECTION 7 — HANDLING AND STORAGE

Flinn Suggested Chemical Storage Pattern: Organic #9. Store with dyes, indicators and stains.
Keep container tightly closed. Store in a cool, dry place.

SECTION 8 — EXPOSURE CONTROLS, PERSONAL PROTECTION

Wear protective gloves, protective clothing, and eye protection. Wash hands thoroughly after handling. Will stain skin, clothing, and surfaces.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Green liquid. Odorless.

Absorbance maximum: 617nm

Biological stain.

pH indicator: 0 yellow to 2.0 green and 11.6 blue-green to 14.0 colorless.

SECTION 10 — STABILITY AND REACTIVITY

Shelf life: Indefinite, if stored properly.

SECTION 11 — TOXICOLOGICAL INFORMATION

Acute effects: N.A.

ORL-RAT LD₅₀: 275 mg/kg as malachite green

Chronic effects: N.A.

IHL-RAT LC₅₀: N.A.

Target organs: N.A.

SKN-RBT LD₅₀: 2000 mg/kg as malachite green

N.A. = Not available, not all health aspects of this substance have been fully investigated.

SECTION 12 — ECOLOGICAL INFORMATION

Data not yet available.

SECTION 13 — DISPOSAL CONSIDERATIONS

Please review all federal, state and local regulations that may apply before proceeding.

Flinn Suggested Disposal Method #26b is one option.

SECTION 14 — TRANSPORT INFORMATION

Shipping name: Not regulated. Hazard class: N/A. UN number: N/A.

N/A = Not applicable

SECTION 15 — REGULATORY INFORMATION

Not listed.

SECTION 16 — OTHER INFORMATION

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Consult your copy of the *Flinn Science Catalog/Reference Manual* for additional information about laboratory chemicals.

Revision Date: February 6, 2014

FLINN SCIENTIFIC, INC.

Safety Data Sheet (SDS)

SDS #: 524.00

Revision Date: March 21, 2014

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Methylene Blue

Flinn Scientific, Inc. P.O. Box 219, Batavia, IL 60510 (800) 452-1261

CHEMTREC Emergency Phone Number: (800) 424-9300

Signal Word **WARNING**

Pictograms

SECTION 2 — HAZARDS IDENTIFICATION

Hazard class: Acute toxicity, oral (Category 4). Harmful if swallowed (H302). Do not eat, drink or smoke when using this product (P270).

Hazard class: Skin and serious eye damage, corrosion or irritation (Category 2, 2A). Causes skin and serious eye irritation (H315+H319).

Hazard class: Specific target organ toxicity, single exposure; Respiratory tract irritation (Category 3). May cause respiratory irritation (H335). Avoid breathing dust or fumes (P261).



SECTION 3 — COMPOSITION, INFORMATION ON INGREDIENTS

Component Name	CAS Number	Formula	Formula Weight	Concentration
Methylene blue trihydrate	7220-79-3	$C_{16}H_{18}ClN_3S \cdot 3H_2O$	373.90	
Synonyms: 3,7-bis(Dimethylamino)phenazathionium chloride; Basic Blue 9; Tetramethylthionine chloride; C.I. 52015				

SECTION 4 — FIRST AID MEASURES

If exposed or concerned: Get medical advice or attention (P308+P313).

If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing (P304+P340).

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing (P305+P351+P338). **If eye irritation persists:** Get medical advice or attention (P337+P313).

If on skin: Rinse cautiously with water for several minutes (P351).

If swallowed: Rinse mouth. Call a POISON CENTER or physician if you feel unwell (P301+P330+P312).

SECTION 5 — FIRE FIGHTING MEASURES

Nonflammable solid.

When heated to decomposition, may emit toxic fumes.

In case of fire: Use a tri-class dry chemical fire extinguisher.

NFPA CODE
None
established

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Sweep up the spill, place in a sealed bag or container, and dispose. Ventilate area and wash spill site after material pickup is complete. See Sections 8 and 13 for further information.

SECTION 7 — HANDLING AND STORAGE

Flinn Suggested Chemical Storage Pattern: Organic #9. Store with dyes, indicators and stains.
Protect from heat and moisture. Store in a cool, dry place. Keep container tightly closed (P233). Use only in a hood or well-ventilated area (P271).

SECTION 8 — EXPOSURE CONTROLS, PERSONAL PROTECTION

Wear protective gloves, protective clothing, and eye protection (P280). Wash hands thoroughly after handling (P264). Use only in a hood or well-ventilated area (P271). Will stain skin, clothing, and surfaces.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Dark green with bronze-like luster crystals or powder. Slight odor. Absorbance maximum: 660nm
Soluble: Water, alcohol, and chloroform. Biological stain and redox indicator.

SECTION 10 — STABILITY AND REACTIVITY

Avoid contact with strong oxidizers, reducers, and strong bases.
Shelf life: Indefinite, if stored properly.

SECTION 11 — TOXICOLOGICAL INFORMATION

Acute effects: Severe eye irritant, stomach pains, vomiting, diarrhea, nausea, dizziness, headache. ORL-RAT LD₅₀: 1180 mg/kg
Chronic effects: Possible mutagen. IHL-RAT LC₅₀: N.A.
Target organs: Blood. SKN-RBT LD₅₀: N.A.

N.A. = Not available, not all health aspects of this substance have been fully investigated.

SECTION 12 — ECOLOGICAL INFORMATION

Data not yet available.

SECTION 13 — DISPOSAL CONSIDERATIONS

Please review all federal, state and local regulations that may apply before proceeding.
Flinn Suggested Disposal Method #26a is one option.

SECTION 14 — TRANSPORT INFORMATION

Shipping name: Not regulated. Hazard class: N/A. UN number: N/A.

N/A = Not applicable

SECTION 15 — REGULATORY INFORMATION

TSCA-listed.

SECTION 16 — OTHER INFORMATION

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Revision Date: March 21, 2014

FLINN SCIENTIFIC, INC.

Safety Data Sheet (SDS)

SDS #: 518.00

Revision Date: March 13, 2014

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Methyl Red

Flinn Scientific, Inc. P.O. Box 219, Batavia, IL 60510 (800) 452-1261

CHEMTREC Emergency Phone Number: (800) 424-9300

Signal Word **WARNING**

Pictograms

SECTION 2 — HAZARDS IDENTIFICATION

Hazard class: Acute toxicity, oral (Category 5). May be harmful if swallowed (H303).

SECTION 3 — COMPOSITION, INFORMATION ON INGREDIENTS

Component Name	CAS Number	Formula	Formula Weight	Concentration
Methyl red, sodium salt	845-10-3	C ₁₅ H ₁₄ N ₃ O ₂ Na	291.28	
Synonyms: Acid red 2 sodium salt; C.I. 13020; 2-((4-Dimethylamino)phenyl)azo) benzoic acid, sodium salt				

SECTION 4 — FIRST AID MEASURES

Call a POISON CENTER or physician if you feel unwell (P312).

If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing.

If on skin: Wash with plenty of water.

If swallowed: Rinse mouth. Call a POISON CENTER or physician if you feel unwell.

SECTION 5 — FIRE FIGHTING MEASURES

Noncombustible solid.

When heated to decomposition, may emit toxic fumes.

In case of fire: Use a tri-class dry chemical fire extinguisher.

NFPA CODE
None
established

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Do not allow solid to become airborne. Ventilate area. Wipe up the spill, place in a sealed bag or container, and dispose. Wash spill site after material pickup is complete. See Sections 8 and 13 for further information.

FLINN SCIENTIFIC, INC.

Safety Data Sheet (SDS)

SDS #: 675.00

Revision Date: March 21, 2014

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Safranin Alcoholic Staining Solution

Flinn Scientific, Inc. P.O. Box 219, Batavia, IL 60510 (800) 452-1261

CHEMTREC Emergency Phone Number: (800) 424-9300

Signal Word **WARNING**

Pictograms



SECTION 2 — HAZARDS IDENTIFICATION

Hazard class: Flammable liquids (Category 3). Flammable liquid and vapor (H226). Keep away from heat, sparks, open flames, and hot surfaces. No smoking (P210).

Hazard class: Acute toxicity, oral and dermal (Category 5). May be harmful if swallowed or in contact with skin (H303+H313).

Hazard class: Serious eye damage or irritation (Category 2B). Causes eye irritation (H320).

SECTION 3 — COMPOSITION, INFORMATION ON INGREDIENTS

Component Name	CAS Number	Formula	Formula Weight	Concentration
Safranin O	477-73-6	C ₂₀ H ₁₉ ClN ₄	350.85	1%
Ethyl alcohol, denatured	64-17-5	C ₂ H ₅ OH	46.07	39%
Water	7732-18-5	H ₂ O	18.00	60%

SECTION 4 — FIRST AID MEASURES

Call a POISON CENTER or physician if you feel unwell (P312).

If inhaled: Call a POISON CENTER or physician if you feel unwell (P304+P312).

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing.

If on skin (or hair): Immediately remove all contaminated clothing. Rinse skin with water (P303+P361+P353).

If swallowed: Rinse mouth. Call a POISON CENTER or physician if you feel unwell.

SECTION 5 — FIRE FIGHTING MEASURES

Class IC flammable liquid due to ethyl alcohol content.

Flash point: 26 °C

When heated, releases flammable fumes.

In case of fire: Use a tri-class dry chemical fire extinguisher (P370+P378).

NFPA CODE

H-1

F-3

R-0

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Remove all ignition sources and ventilate area. Contain the spill with sand or other inert absorbent material and deposit in a sealed bag or container. See Sections 8 and 13 for further information.

SECTION 7 — HANDLING AND STORAGE

Flinn Suggested Chemical Storage Pattern: Organic #9. Store with dyes, indicators and stains.
Keep container tightly closed (P233). Keep cool (P235).

SECTION 8 — EXPOSURE CONTROLS, PERSONAL PROTECTION

Wear protective gloves, protective clothing, and eye protection (P280). Wash hands thoroughly after handling (P264). Will stain skin, clothing, and surfaces.

Exposure guidelines: (as ethyl alcohol) PEL 1000 ppm (OSHA), Ceiling 1000 ppm (ACGIH)

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Red liquid. Alcohol odor.

Biological stain.

Safranin (biological stain) in ethyl alcohol and water.

SECTION 10 — STABILITY AND REACTIVITY

Avoid contact with oxidizers, peroxides, acids, acid chlorides, acid anhydrides.

Shelf life: Indefinite, if stored properly.

SECTION 11 — TOXICOLOGICAL INFORMATION

Acute effects: Poison, irritant, nausea, dizziness, headache

ORL-RAT LD₅₀: 7060 mg/kg (as ethyl alcohol)

Chronic effects: N.A.

IHL-RAT LC₅₀: 20,000 ppm/10H (as ethyl alcohol)

Target organs: Eyes, liver, kidneys, nerves

SKN-RBT LD₅₀: N.A.

N.A. = Not available, not all health aspects of this substance have been fully investigated.

SECTION 12 — ECOLOGICAL INFORMATION

Data not yet available.

SECTION 13 — DISPOSAL CONSIDERATIONS

Please review all federal, state and local regulations that may apply before proceeding.

Flinn Suggested Disposal Method #18b is one option.

SECTION 14 — TRANSPORT INFORMATION

Shipping name: Not regulated. Hazard class: N/A. UN number: N/A. 39%*****

N/A = Not applicable

SECTION 15 — REGULATORY INFORMATION

Not listed.

SECTION 16 — OTHER INFORMATION

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Revision Date: March 21, 2014