

Section 1: Information

1. Product Identification

- 1.1. Name: Acridine Orange
- 1.2. C.A.S. Number: 65-61-2
- 1.3. Catalog Numbers
 - 1.3.1. ViaStain™ AO Staining Solution, Cat. No.: CS1-0108-5mL, 5mL
 - 1.3.2. ViaStain™ AO Staining Solution, Cat. No.: CS1-0108-1mL, 1mL
- 1.4. Supplier

Nexcelom Bioscience, LLC.
360 Merrimack St., Building 9
Lawrence, MA 01843
Phone Number: 1 (978) 327-5340
Hours of Operation: 9am-5pm EST

Nexcelom Bioscience, Ltd.
Unit 5, Rutherford House
Pencroft Way,
Manchester Science Park
Manchester.M15 6SZ. UK
Phone Number: 0161-232-4592

- 1.5. Emergency Number: Please contact the appropriate local emergency response provider
- 1.6. R.E.A.C.H Registration Number: No registration number is given yet for the substance/substances in this mixture since the annual import quantity is less than the required one tonnage per annum

2. Recommended Use

- 2.1. Acridine Orange is a fluorescent dye and should only be used to stain mammalian cells
- 2.2. Acridine Orange is not intended to be used as a human or animal diagnostic or therapeutic reagent
- 2.3. Do not use Acridine Orange for any other uses

Section 2: Hazard Identification

1. Hazard Classification

- 1.1. Phosphate buffered saline
 - 1.1.1. H412 Toxic to aquatic life Category: Aquatic Acute – 3
Aquatic Chronic – 3

For the full text of H-Statements please reference Section 16

- 1.2. No R-phrases to report
For the full text of R-phrases please reference Section 16
- 1.3. No S-phrases to report
For the full text of S-phrases please reference Section 16

2. Label Elements

- 2.1. Signal Words: None
- 2.2. Hazard Statements

- 2.2.1. Not a hazardous mixture
- 2.3. Precautionary Statements:
 - 2.3.1. None
- 2.4. Pictograms:
 - 2.4.1. None
- 2.5. Other Hazards Which Do Not Result in Classification
 - 2.5.1. To our knowledge, the hazards of this material have not been thoroughly investigated, but we recommend the handling of all chemicals to be done with caution
 - 2.5.2. Hazardous Materials Identification System Classification
 - Health Hazard: 0
 - Chronic Health Hazard: 0
 - Flammability: 0
 - Physical Hazard: 0
 - 2.5.3. National Fire Protection Association Rating
 - Health Hazard: 0
 - Fire: 0
 - Reactivity Hazard: 0

Section 3: Composition and Information on Ingredients

- 1. Substance: Acridine Orange
 - 1.1. Hazardous Component: None
 - 1.2. Synonyms
 - 1.2.1. AO
 - 1.3. Hazardous component molecular formula: C17H19N3
 - 1.4. Hazardous component molecular weight: 265.36 g/mol
- 2. Substance: Phosphate Buffered Saline
 - 2.1. Hazardous Component: Potassium chloride
 - 2.2. Synonyms
 - 2.2.1. PBS
 - 2.3. Hazardous component molecular formula: KCl
 - 2.4. Hazardous component molecular weight: 74.5513 g/mol

| Common Name | Classification | CAS Number/ IUPAC Name | EC- Number | Index Number | M-Factor | Percentage |
|---------------------------|--|---------------------------|---------------|-----------------|----------|---------------|
| Phosphate buffered saline | Aquatic Acute: 3 Aquatic Chronic: 3 H412 | 7447-40-7 | 231-211-8 | N/A | N/A | 99.9 % - 98 % |
| Acridine Orange | None | 65-61-2 | 200-614-0 | N/A | N/A | 0.1 % - 2 % |

Section 4: First-aid Measures

1. Always remove contaminated personnel away from the hazardous area, and to a safe area
2. Most Important Symptoms and Effects
 - 2.1. No information available
3. Indication of Immediate Medical Attention or Necessary Special Treatment
 - 3.1. No information available
4. Medical Professionals
 - 4.1. If medical advice or attention is required, present them with this safety data sheet first
 - 4.2. Notes to Physician: Treat symptomatically
5. Inhalation
 - 5.1. Place affected person in fresh air and in a comfortable position for breathing
 - 5.2. Seek medical advice or attention
6. Skin Contact
 - 6.1. Remove any contaminated clothing from the affected person, and wash the contaminated area with soap and plenty of water for 15 minutes
 - 6.1.1. Wash clothes before re-use
 - 6.2. Seek medical advice or attention
7. Eye Contamination
 - 7.1. Flush open eyes for 15 minutes with water
 - 7.2. If contacts are present, remove contacts after the first 15-minute flush, and flush for an additional 15 minutes
 - 7.3. Seek medical advice or attention
8. Ingestion
 - 8.1. Do not induce vomiting
 - 8.2. Drink plenty of water
 - 8.3. Never give an unconscious person anything by mouth
 - 8.4. Seek medical advice or attention

Section 5: Fire-fighting Measures

1. Suitable Extinguishing Media
 - 1.1. Carbon dioxide
 - 1.2. Dry chemical extinguisher
 - 1.3. Alcohol- resistant foam extinguisher
 - 1.4. Water
2. Not Suitable Extinguishing Media
 - 2.1. No information available
3. Specific Hazards Arising from the Chemical
 - 3.1. No information available
4. Special Protective Actions for Fire-fighters
 - 4.1. Wear a self-contained breathing apparatus for firefighting if necessary

5. Further Information
 - 5.1. No information available

Section 6: Accidental Release Measures

1. Personal Precautions
 - 1.1. Wear proper personal protective equipment
 - 1.2. Avoid formation of dusts
 - 1.3. Avoid breathing dusts, vapors, mists, or gases
 - 1.4. Ensure adequate ventilation
 - 1.5. Remove all sources of ignition
2. Protective Equipment
 - 2.1. Proper personal protective equipment
3. Emergency Procedures
 - 3.1. See Section 5
4. Accidental Spills or Release of the Product
 - 4.1. Wear proper protective equipment while cleaning up spills
 - 4.2. Remove ignition sources and provide adequate ventilation
 - 4.3. Contact emergency personnel if required
5. Emergency Responders
 - 5.1. Personal Protective Equipment
 - 5.1.1. See Section 5
6. Environmental Precautions
 - 6.1. Contain leakage or spillage if safe to do so
 - 6.2. Do not let product enter drains
7. Methods and Materials for Containment and Cleaning
 - 7.1. Drains
 - 7.1.1. Do not let product enter drains
 - 7.2. Capping procedures
 - 7.2.1. No information available
 - 7.3. Neutralization techniques
 - 7.3.1. No information available
 - 7.4. Decontamination techniques
 - 7.4.1. No information available
 - 7.5. Absorbent Materials
 - 7.5.1. Inert absorbent material
 - 7.6. Cleaning Techniques
 - 7.6.1. Pick up and arrange disposal without creating dusts
 - 7.6.2. Sweep up or shovel after application of absorbent material
 - 7.6.3. Keep in suitable, closed containers for disposal
 - 7.6.3.1. See section 13 for disposal options
 - 7.7. Vacuuming Techniques
 - 7.7.1. No information available

7.8. Special Equipment

7.8.1. No information available

Section 7: Handling and Storage

1. Safe Handling
 - 1.1. Avoid inhalation of vapor, mist, dusts, and aerosols
 - 1.2. Provide appropriate exhaust ventilation at places where dust is formed
 - 1.3. Avoid direct contact with mixture
2. Incompatible Substances
 - 2.1. No information available
3. Operations and Conditions to Avoid
 - 3.1. No information available
4. General Good Hygiene Practices
 - 4.1. No eating, drinking or smoking in work areas
 - 4.2. Wash hands after breaks and at the end of the work day
 - 4.3. Remove contaminated clothing and protective equipment before entering eating areas
5. Conditions for Safe Storage
 - 5.1. Keep container tightly closed
 - 5.2. Keep in a dry and well-ventilated place
 - 5.3. Store at 4 °C
 - 5.4. Conditions to avoid
 - 5.4.1. No information available
 - 5.5. Environmental Effects to avoid
 - 5.5.1. No information available
6. How to maintain product integrity
 - 6.1. No information available
7. Engineering Advice
 - 7.1. No information available

Section 8: Exposure Controls and Personal Protection

1. National Exposure Limits
 - 1.1. Substance: Acridine Orange
 - 1.1.1. CAS No. 65-61-2

| Country | TWA (8-hour weighted average) | | Short -Term Limits/Excursion Limits (STEL) | | Biological Limit Value |
|----------|-------------------------------|-------------------|--|-------------------|------------------------|
| | ppm | mg/m ³ | ppm | mg/m ³ | |
| Austria | - | - | - | - | - |
| Belgium | - | - | - | - | - |
| Bulgaria | - | - | - | - | - |
| Croatia | - | - | - | - | - |

| | | | | | |
|----------------|---|---|---|---|---|
| Cyprus | - | - | - | - | - |
| Czech Republic | - | - | - | - | - |
| Denmark | - | - | - | - | - |
| Estonia | - | - | - | - | - |
| Finland | - | - | - | - | - |
| France | - | - | - | - | - |
| Germany | - | - | - | - | - |
| Greece | - | - | - | - | - |
| Hungary | - | - | - | - | - |
| Ireland | - | - | - | - | - |
| Italy | - | - | - | - | - |
| Latvia | - | - | - | - | - |
| Lithuania | - | - | - | - | - |
| Luxembourg | - | - | - | - | - |
| Malta | - | - | - | - | - |
| Netherlands | - | - | - | - | - |
| Poland | - | - | - | - | - |
| Portugal | - | - | - | - | - |
| Romania | - | - | - | - | - |
| Slovakia | - | - | - | - | - |
| Slovenia | - | - | - | - | - |
| Spain | - | - | - | - | - |
| Sweden | - | - | - | - | - |
| United Kingdom | - | - | - | - | - |

- 2. Appropriate Engineering Controls
 - 2.1. Handle in accordance with good industrial hygiene and safety practice
- 3. Exposure Controls
 - 3.1. Always use good occupational hygiene practices
 - 3.1.1. Do not eat, drink, or smoke while using this product
 - 3.1.2. Wash hands before breaks and at the end of the work day
 - 3.1.3. Regularly clean equipment, work area, and clothing
 - 3.2. Eye and face protection
 - 3.2.1. Use safety glasses with side-shields conforming to EN166 or equipment for eye protection tested and approved under appropriate government standards such as NIOSH (U.S.A.) or EN 166 (E.U.)
 - 3.3. Skin protection
 - 3.3.1. Wear impervious clothing and handle with gloves
 - 3.3.2. Gloves must be inspected prior to use
 - 3.3.3. Use proper removal technique (without touching glove's outer surface) to avoid skin contact with this product
 - 3.3.4. Dispose of contaminated gloves after use in accordance with applicable laws (outlined in Section 13) and good laboratory practices

- 3.3.5. Wash hands with soap and plenty of water after use
- 3.4. Respiratory Protection
 - 3.4.1. No information available
- 3.5. Thermal Hazards
 - 3.5.1. No information available
- 4. Environmental Exposure Controls
 - 4.1. No information available

Section 9: Physical and Chemical Properties

| Property | Data |
|--|---|
| Physical State | Liquid |
| Color | Orange to Very Dark Orange and Brown to Very Dark Brown and Red-Orange and Red-Brown and Orange-Brown and Very Dark Red-Brown |
| Odor | No information available |
| Odor Threshold | No information available |
| Freezing Point | No information available |
| Melting Point | No information available |
| Boiling point or Initial Boiling Point/Range | No information available |
| Flammability | No information available |
| Lower and Upper Explosion Limit/Flammability Limit | No information available |
| Flash Point | No information available |
| Auto-Ignition Temperature | No information available |
| Explosive Properties | No information available |
| Decomposition Temperature | No information available |
| Oxidizing Properties | No information available |
| pH | No information available |
| Viscosity | No information available |
| Solubility | High in water |
| Partition Coefficient n-octanol/water (Log value) | No information available |
| Vapor Pressure | No information available |
| Density and/or Relative Density | No information available |
| Relative Vapor Density | No information available |
| Particle Characteristics | No information available |
| Evaporation Rate | No information available |
| Surface Tension | No information available |

Section 10: Stability and Reactivity

1. Reactivity
 - 1.1. No information available
2. Chemical Stability
 - 2.1. Stable under recommended storage conditions
3. Possibility of Hazardous Reactions
 - 3.1. No information available
4. Conditions to avoid
 - 4.1. Heat, flames and sparks
5. Incompatible Materials
 - 5.1. No information available
6. Hazardous Decomposition Products
 - 6.1. Under fire conditions: Carbon Oxides
 - 6.2. Other decomposition products: No information available

Section 11: Toxicological Information

1. Acute Toxicity
 - 1.1. No information available
2. Skin Corrosion/Irritation
 - 2.1. No information available
3. Serious Eye Damage/Irritation
 - 3.1. No information available
4. Respiratory or Skin Sensitization
 - 4.1. No information available
5. Repeated Dose Toxicity
 - 5.1. No Information available
6. Germ Cell Mutagenicity
 - 6.1. No information available
7. Carcinogenicity
 - 7.1. IARC
 - 7.1.1. No component of this product present at levels greater than or equal to 0.1 % is identified as probable, possible, or confirmed human carcinogen by IARC
8. Reproductive Toxicity
 - 8.1. No information available
9. Specific Target Organ Toxicity- Single Exposure
 - 9.1. No information available
10. Specific Target Organ Toxicity – Repeated Exposure
 - 10.1. No information available
11. Aspiration Hazard
 - 11.1. No information available
12. Likely Routes of Exposure
 - 12.1. Skin

- 12.2. Eyes
- 12.3. Inhalation
- 13. Symptoms Related to Physical, Chemical, and Toxicological Characteristics
 - 13.1. To our knowledge, the hazards of this material have not been thoroughly investigated, but we recommend the handling of all chemicals to be done with caution
- 14. Delayed and Immediate Effects
 - 14.1. Short Term Exposure
 - 14.1.1. No information available
 - 14.2. Long Term Exposure
 - 14.2.1. No information available
- 15. Interactive Effects
 - 15.1. No information available
- 16. Other Information
 - 16.1. Liver irregularities – based on human evidence

Section 12: Ecological Information

- 1. Ecotoxicity: May cause long lasting harmful effects to aquatic life
 - 1.1. Fish
 - 1.1.1. No information available
 - 1.2. Crustaceans
 - 1.2.1. No information available
 - 1.3. Algae
 - 1.3.1. No information available
 - 1.4. Other Aquatic Plants
 - 1.4.1. No information available
 - 1.5. Soil Micro- and Macro-Organisms
 - 1.5.1. No information available
 - 1.6. Birds
 - 1.6.1. No information available
 - 1.7. Bees
 - 1.7.1. No information available
 - 1.8. Plants
 - 1.8.1. No information available
 - 1.9. Inhibition of Micro-Organisms
 - 1.9.1. No information available
- 2. Persistence and Degradability
 - 2.1. No information available
- 3. Bioaccumulative Potential
 - 3.1. No information available
- 4. Mobility in Soil
 - 4.1. No information available

5. Other Adverse Effects
 - 5.1. Environmental Fate
 - 5.1.1. No information available
 - 5.2. Ozone Depletion Potential
 - 5.2.1. No information available
 - 5.3. Photochemical Ozone Creation Potential
 - 5.3.1. No information available
 - 5.4. Endocrine Disrupting Potential and/or Global Warming Potential
 - 5.4.1. No information available

Section 13: Disposal Considerations

1. Disposal Methods
 - 1.1. Please take precautions to generate as little waste as possible while handling and using this product
 - 1.2. Do not dispose of contaminated materials in the sewage
 - 1.3. Packaging, containers, solutions and any material that may have come in contact with this product should be considered as hazardous as the product itself
 - 1.4. Disposal of this product and any of its by-products should be in compliance with all applicable local, regional and national/federal biological hazardous waste disposal regulations

Section 14: Transport Information

1. European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR)
 - 1.1. No information available
2. Regulations concerning the International Carriage of Dangerous Goods by Rail (RID)
 - 2.1. No information available
3. European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN)
 - 3.1. No information available
 - 3.2. UN Number: No information available
4. UN Proper Shipping Name: No information available
5. Transport Hazard Class: No information available
6. Packing Group: No information available
7. Environmental Hazards
 - 7.1. No information available
8. Special Precautions for the User
 - 8.1. No information available
9. Transport in bulk according to Annex II of MARPOL 73/78
 - 9.1. Not applicable

- 9.2. International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk (IBC Code): Not applicable

Section 15: Regulatory Information

1. Safety Regulations/Legislations
 - 1.1. No information available
2. Health Regulations/Legislations
 - 2.1. No information available
3. Environmental Regulations/Legislations
 - 3.1. No information available
4. Chemical Safety Assessment
 - 4.1. No information available

Section 16: Other Information

1. Literary references
 - 1.1. No information available
 - 1.2. H statements according to Regulation (EC) No. 1272/2008
 - 1.2.1. H412 Toxic to aquatic life Category: Aquatic Acute – 3
Aquatic Chronic – 3
 - 1.3. R-phrases according to EU Directives 67/584/EEC or 1999/45/EC
 - 1.3.1. Not applicable
2. Methods of Evaluation
 - 2.1. In accordance with Article 9 (2.) of Regulation (EC) No. 1272/2008
 - 2.2. In accordance with Article 8 (3. B) of Regulation (EC) No. 1272/2008
 - 2.3. In accordance with Annex 1 (1.1.1) of Regulation (EC) No. 1272/2008
 - 2.4. In accordance with Annex XI (1.2) of Regulation (EC) No. 1907/2006
3. Training Advice
 - 3.1. Handle this product using standard precautionary laboratory practices, with effective engineering conditions and while wearing the proper protective equipment described in this safety data sheet
 - 3.2. Only use this product for research purposes and never as a diagnostic tool

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Date Revised: 29, January 2019

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1. Removed respirator mention

END OF SDS