

Kit Summary

Product Code(s) AB150661
Product name Alcian Blue, pH 1.0 (Mucin Stain)

Alcian Blue pH 1

| Chemical Name | EC-No | CAS-No | Weight % | Classification (67/548) | Classification (Reg. 1272/2008) | REACH Registration Number |
|-------------------|-----------|-----------|----------|-------------------------|--|---------------------------|
| Hydrochloric acid | 231-595-7 | 7647-01-0 | 0.8 | C; R34 Xi; R37 | STOT SE 3 (H335) Skin Corr. 1B (H314) | No data available |

Acetic Acid Solution

| Chemical Name | EC-No | CAS-No | Weight % | Classification (67/548) | Classification (Reg. 1272/2008) | REACH Registration Number |
|---------------|-----------|---------|----------|-------------------------|--|---------------------------|
| Acetic acid | 200-580-7 | 64-19-7 | 3 | R10 C; R35 | Skin Corr. 1A (H314) Flam Liq. 3 (H226) | |

Safranin O Solution

| Chemical Name | EC-No | CAS-No | Weight % | Classification (67/548) | Classification (Reg. 1272/2008) | REACH Registration Number |
|---------------|-----------|----------|----------|-------------------------|--|---------------------------|
| Safranin O | 207-518-8 | 477-73-6 | 0.1 | Xi; R41 | Eye Dam. 1 (H318) | No data available |
| Acetic acid | 200-580-7 | 64-19-7 | 0.1 | R10 C; R35 | Skin Corr. 1A (H314) Flam Liq. 3 (H226) | No data available |

GHS / CLP - GHS - Classification

Not dangerous

2.3 Other information

No information available

TRANSPORT INFORMATION

DOT Not dangerous goods

IATA Not dangerous goods

ADR Not dangerous goods

Safety Data Sheet

Issuing date No data available

Revision Date 02-May-2017

Version 3

1. PRODUCT AND COMPANY IDENTIFICATION

Product name Alcian Blue pH 1

Recommended use For research use only

Supplier Address Abcam Inc
1 Kendall Square, Ste 341
Cambridge, MA 02139-1517
USA
Tel: (617)225-2272 or 888-77-ABCAM (22226) (US toll free)
Fax: (866) 739-9884 or (866) 457-9616 (both US toll free)

E-mail address technical@abcam.com

Emergency telephone Tel: (617)225-2272 or 888-77-ABCAM (22226) (US toll free) - Monday-Friday 8am-9pm EST

2. HAZARDS IDENTIFICATION

GHS - Classification

| | |
|-------|----------------|
| Ozone | Not applicable |
|-------|----------------|

GHS Label elements, including precautionary statements

Not dangerous

Other information

No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

| Chemical Name | CAS-No | Weight % | Classification (Reg. 1272/2008) |
|-------------------|-----------|----------|--|
| Hydrochloric acid | 7647-01-0 | 0.1-1 | STOT SE 3 (H335) Skin Corr. 1B (H314) |

For the full text of the H-Statements mentioned in this Section, see Section 16

4. FIRST AID MEASURES

| | |
|---------------------------|--|
| Eye contact | Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. |
| Skin contact | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. |
| Inhalation | Move to fresh air. |
| Ingestion | Clean mouth with water. Drink plenty of water. |
| Notes to physician | Treat symptomatically. |

5. FIRE-FIGHTING MEASURES

| | |
|--|--|
| Flammable properties | Not flammable. |
| Flash point | not determined |
| Suitable extinguishing media | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Explosion Data | |
| Sensitivity to Mechanical Impact | None. |
| Sensitivity to Static Discharge | None. |
| Protective equipment and precautions for firefighters | As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear to prevent contact with skin and eyes. |

6. ACCIDENTAL RELEASE MEASURES

| | |
|----------------------------------|--|
| Personal precautions | Ensure adequate ventilation. |
| Environmental precautions | Try to prevent the material from entering drains or water courses. |
| Methods for containment | Prevent further leakage or spillage if safe to do so. |
| Methods for cleaning up | Pick up and transfer to properly labeled containers. |

7. HANDLING AND STORAGE

| | |
|--|--|
| Advice on safe handling | Handle in accordance with good industrial hygiene and safety practice. |
| Technical measures/Storage conditions | Keep containers tightly closed in a dry, cool and well-ventilated place. |

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

| Chemical Name | ACGIH TLV | OSHA PEL | NIOSH IDLH |
|--------------------------------|----------------|---|---|
| Hydrochloric acid 7647-01-0 | Ceiling: 2 ppm | (vacated) Ceiling: 5 ppm (vacated) Ceiling: 7 mg/m ³ Ceiling: 5 ppm Ceiling: 7 mg/m ³ | IDLH: 50 ppm Ceiling: 5 ppm Ceiling: 7 mg/m ³ |

NIOSH IDLH: Immediately Dangerous to Life or Health

Other Exposure Guidelines Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Engineering measures
Showers
Eyewash stations
Ventilation systems

Personal protective equipment

Eye/face protection No special protective equipment required.
Skin and body protection No special protective equipment required.
Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

Hygiene measures Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|----------------------------------|---------------------------|------------------------------------|---------------------------|
| Appearance | No information available. | Odor | No information available. |
| Odor Threshold | No information available | Physical State @20°C | No information available |
| pH | No information available | Autoignition temperature | No information available |
| Flash point | No information available | Boiling point/boiling range | No information available |
| Decomposition temperature | No information available | Flammability Limits in Air | No information available |
| Melting point/range | No information available | solubility | No information available. |
| Explosion limits | No information available | Vapor Pressure @20°C (kPa) | No information available |
| Specific Gravity | No data available | VOC Content(%) | Not applicable |
| Evaporation rate | No information available | | |
| Vapor density | No data available | | |

10. STABILITY AND REACTIVITY

Stability Stable under recommended storage conditions.
Incompatible products None known based on information supplied.
Conditions to avoid None known based on information supplied.
Hazardous decomposition products None known based on information supplied.
Hazardous polymerization Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product Information Product does not present an acute toxicity hazard based on known or supplied information

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|-------------------|-------------------|-----------------------|----------------------|
| Hydrochloric acid | 700 mg/kg (Rat) | 5010 mg/kg (Rabbit) | 3124 ppm (Rat) 1 h |

Chronic toxicity

carcinogenicity This product contains one or more substances which are classified by IARC as carcinogenic to humans (Group I), probably carcinogenic to humans (Group 2A) or possibly carcinogenic to humans (Group 2B)

| Chemical Name | ACGIH | IARC | NTP | OSHA |
|-------------------|-------|---------|-----|------|
| Hydrochloric acid | | Group 3 | | |

IARC: (International Agency for Research on Cancer)

Group 3 - Not Classifiable as to Carcinogenicity in Humans

Target Organ Effects Eyes. Respiratory system. Skin.

12. ECOLOGICAL INFORMATION

Ecotoxicity

The environmental impact of this product has not been fully investigated.

| Chemical Name | Toxicity to algae | Toxicity to fish | Toxicity to microorganisms | Toxicity to daphnia and other aquatic invertebrates |
|-------------------|-------------------|---|----------------------------|---|
| Hydrochloric acid | | 282: 96 h Gambusia affinis mg/L LC50 static | | |

13. DISPOSAL CONSIDERATIONS

Waste disposal methods This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated packaging Do not re-use empty containers.

14. TRANSPORT INFORMATION

DOT Not dangerous goods

IATA Not dangerous goods

ADR Not dangerous goods

15. REGULATORY INFORMATION

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

SARA 311/312 Hazard Categories

| | |
|--|----|
| Acute Health Hazard | no |
| Chronic Health Hazard | no |
| Fire Hazard | no |
| Sudden Release of Pressure Hazard | no |
| Reactive Hazard | no |

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

| Chemical Name | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants | CWA - Hazardous Substances |
|-------------------|-----------------------------|------------------------|---------------------------|----------------------------|
| Hydrochloric acid | 5000 lb | | | X |

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

| Chemical Name | Hazardous Substances RQs | Extremely Hazardous Substances RQs | RQ |
|-------------------|--------------------------|------------------------------------|---|
| Hydrochloric acid | 5000 lb | 5000 lb | RQ 5000 lb final RQ RQ 2270 kg final RQ |

U.S. State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

| Chemical Name | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|-------------------|---------------|------------|--------------|----------|--------------|
| Hydrochloric acid | X | X | X | X | X |

International Regulations

| Chemical Name | Carcinogen Status | Exposure limits |
|-------------------|-------------------|---|
| Hydrochloric acid | | Mexico: Ceiling 5 ppm Mexico: Ceiling 7 mg/m ³ |

WHMIS Note:

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

16. OTHER INFORMATION**Full text of H-Statements referred to under sections 2 and 3**

H335 - May cause respiratory irritation H314 - Causes severe skin burns and eye damage

Revision Date

02-May-2017

Revision Note

No information available.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of MSDS

Safety Data Sheet

Issuing date No data available

Revision Date 02-May-2017

Version 3

1. PRODUCT AND COMPANY IDENTIFICATION

Product name Acetic Acid Solution

Recommended use For research use only

Supplier Address Abcam Inc
1 Kendall Square, Ste 341
Cambridge, MA 02139-1517
USA
Tel: (617)225-2272 or 888-77-ABCAM (22226) (US toll free)
Fax: (866) 739-9884 or (866) 457-9616 (both US toll free)

E-mail address technical@abcam.com

Emergency telephone Tel: (617)225-2272 or 888-77-ABCAM (22226) (US toll free) - Monday-Friday 8am-9pm EST

2. HAZARDS IDENTIFICATION

GHS - Classification

| | |
|-------|----------------|
| Ozone | Not applicable |
|-------|----------------|

GHS Label elements, including precautionary statements

Not dangerous

Other information

No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

| Chemical Name | CAS-No | Weight % | Classification (Reg. 1272/2008) |
|---------------|---------|----------|--|
| Acetic acid | 64-19-7 | 1-5 | Skin Corr. 1A (H314) Flam Liq. 3 (H226) |

For the full text of the H-Statements mentioned in this Section, see Section 16

4. FIRST AID MEASURES

| | |
|---------------------------|--|
| Eye contact | Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. |
| Skin contact | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. |
| Inhalation | Move to fresh air. |
| Ingestion | Clean mouth with water. Drink plenty of water. |
| Notes to physician | Treat symptomatically. |

5. FIRE-FIGHTING MEASURES

| | |
|--|--|
| Flammable properties | Not flammable. |
| Flash point | not determined |
| Suitable extinguishing media | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Explosion Data | |
| Sensitivity to Mechanical Impact | None. |
| Sensitivity to Static Discharge | None. |
| Protective equipment and precautions for firefighters | As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear to prevent contact with skin and eyes. |

6. ACCIDENTAL RELEASE MEASURES

| | |
|----------------------------------|--|
| Personal precautions | Ensure adequate ventilation. |
| Environmental precautions | Try to prevent the material from entering drains or water courses. |
| Methods for containment | Prevent further leakage or spillage if safe to do so. |
| Methods for cleaning up | Pick up and transfer to properly labeled containers. |

7. HANDLING AND STORAGE

| | |
|--|--|
| Advice on safe handling | Handle in accordance with good industrial hygiene and safety practice. |
| Technical measures/Storage conditions | Keep containers tightly closed in a dry, cool and well-ventilated place. |

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

| Chemical Name | ACGIH TLV | OSHA PEL | NIOSH IDLH |
|------------------------|-----------------------------|---|--|
| Acetic acid 64-19-7 | STEL: 15 ppm TWA: 10 ppm | TWA: 10 ppm TWA: 25 mg/m ³ (vacated) TWA: 10 ppm (vacated) TWA: 25 mg/m ³ | IDLH: 50 ppm TWA: 10 ppm TWA: 25 mg/m ³ STEL: 15 ppm STEL: 37 mg/m ³ |

Engineering measures Showers
Eyewash stations
Ventilation systems

Personal protective equipment

Eye/face protection No special protective equipment required.
Skin and body protection No special protective equipment required.
Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

Hygiene measures Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|----------------------------------|---------------------------|------------------------------------|---------------------------|
| Appearance | No information available. | Odor | No information available. |
| Odor Threshold | No information available | Physical State @20°C | No information available |
| pH | No information available | Autoignition temperature | No information available |
| Flash point | No information available | Boiling point/boiling range | No information available |
| Decomposition temperature | No information available | Flammability Limits in Air | No information available |
| Melting point/range | No information available | solubility | No information available. |
| Explosion limits | No information available | Vapor Pressure @20°C (kPa) | No information available |
| Specific Gravity | No data available | VOC Content(%) | 3 |
| Evaporation rate | No information available | | |
| Vapor density | No data available | | |

10. STABILITY AND REACTIVITY

Stability Stable under recommended storage conditions.

Incompatible products None known based on information supplied.

Conditions to avoid None known based on information supplied.

Hazardous decomposition products None known based on information supplied.

Hazardous polymerization Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product Information Product does not present an acute toxicity hazard based on known or supplied information

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---------------|--------------------|-----------------------|-----------------------|
| Acetic acid | 3310 mg/kg (Rat) | 1060 mg/kg (Rabbit) | 11.4 mg/L (Rat) 4 h |

Chronic toxicity

Target Organ Effects Eyes. Respiratory system. Skin. Teeth.

12. ECOLOGICAL INFORMATION

Ecotoxicity

The environmental impact of this product has not been fully investigated.

| Chemical Name | Toxicity to algae | Toxicity to fish | Toxicity to microorganisms | Toxicity to daphnia and other aquatic invertebrates |
|----------------------|-------------------|--|----------------------------|--|
| Acetic acid | | 79: 96 h Pimephales promelas mg/L LC50 static 75: 96 h Lepomis macrochirus mg/L LC50 static | | 47: 24 h Daphnia magna mg/L EC50 65: 48 h Daphnia magna mg/L EC50 Static |
| Chemical Name | | | log Pow | |
| Acetic acid | | | -0.31 | |

13. DISPOSAL CONSIDERATIONS

Waste disposal methods This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated packaging Do not re-use empty containers.

This product contains one or more substances that are listed with the State of California as a hazardous waste.

| Chemical Name | California Hazardous Waste Status |
|---------------|-----------------------------------|
| Acetic acid | Toxic Corrosive Ignitable |

14. TRANSPORT INFORMATION

DOT Not dangerous goods

IATA Not dangerous goods

ADR Not dangerous goods

15. REGULATORY INFORMATION

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

| | |
|--|----|
| Acute Health Hazard | no |
| Chronic Health Hazard | no |
| Fire Hazard | no |
| Sudden Release of Pressure Hazard | no |
| Reactive Hazard | no |

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

| Chemical Name | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants | CWA - Hazardous Substances |
|---------------|-----------------------------|------------------------|---------------------------|----------------------------|
| Acetic acid | 5000 lb | | | X |

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

| Chemical Name | Hazardous Substances RQs | Extremely Hazardous Substances RQs | RQ |
|---------------|--------------------------|------------------------------------|---|
| Acetic acid | 5000 lb | | RQ 5000 lb final RQ RQ 2270 kg final RQ |

U.S. State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

| Chemical Name | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|---------------|---------------|------------|--------------|----------|--------------|
| Acetic acid | X | X | X | | X |

International Regulations

| Chemical Name | Carcinogen Status | Exposure limits |
|---------------|-------------------|--|
| Acetic acid | | Mexico: TWA 10 ppm Mexico: TWA 25 mg/m ³ Mexico: STEL 15 ppm Mexico: STEL 37 mg/m ³ |

WHMIS Note:

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

16. OTHER INFORMATION**Full text of H-Statements referred to under sections 2 and 3**

H314 - Causes severe skin burns and eye damage H226 - Flammable liquid and vapor

Revision Date

02-May-2017

Revision Note

No information available.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of MSDS

Safety Data Sheet

Issuing date No data available

Revision Date 02-May-2017

Version 2

1. PRODUCT AND COMPANY IDENTIFICATION

Product name Safranin O Solution

Recommended use For research use only

Supplier Address Abcam Inc
1 Kendall Square, Ste 341
Cambridge, MA 02139-1517
USA
Tel: (617)225-2272 or 888-77-ABCAM (22226) (US toll free)
Fax: (866) 739-9884 or (866) 457-9616 (both US toll free)

E-mail address technical@abcam.com

Emergency telephone Tel: (617)225-2272 or 888-77-ABCAM (22226) (US toll free) - Monday-Friday 8am-9pm EST

2. HAZARDS IDENTIFICATION

GHS - Classification

| | |
|-------|----------------|
| Ozone | Not applicable |
|-------|----------------|

GHS Label elements, including precautionary statements

Not dangerous

Other information

No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

| Chemical Name | CAS-No | Weight % | Classification (Reg. 1272/2008) |
|---------------|----------|----------|--|
| Safranin O | 477-73-6 | 0.1-1 | Eye Dam. 1 (H318) |
| Acetic acid | 64-19-7 | 0.1-1 | Skin Corr. 1A (H314) Flam Liq. 3 (H226) |

For the full text of the H-Statements mentioned in this Section, see Section 16

4. FIRST AID MEASURES

| | |
|---------------------------|--|
| Eye contact | Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. |
| Skin contact | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. |
| Inhalation | Move to fresh air. |
| Ingestion | Clean mouth with water. Drink plenty of water. |
| Notes to physician | Treat symptomatically. |

5. FIRE-FIGHTING MEASURES

| | |
|--|--|
| Flammable properties | Not flammable. |
| Flash point | not determined |
| Suitable extinguishing media | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Explosion Data | |
| Sensitivity to Mechanical Impact | None. |
| Sensitivity to Static Discharge | None. |
| Protective equipment and precautions for firefighters | As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear to prevent contact with skin and eyes. |

6. ACCIDENTAL RELEASE MEASURES

| | |
|----------------------------------|--|
| Personal precautions | Ensure adequate ventilation. |
| Environmental precautions | Try to prevent the material from entering drains or water courses. |
| Methods for containment | Prevent further leakage or spillage if safe to do so. |
| Methods for cleaning up | Pick up and transfer to properly labeled containers. |

7. HANDLING AND STORAGE

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice.

Technical measures/Storage conditions Keep containers tightly closed in a dry, cool and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

| Chemical Name | ACGIH TLV | OSHA PEL | NIOSH IDLH |
|------------------------|-----------------------------|---|--|
| Acetic acid 64-19-7 | STEL: 15 ppm TWA: 10 ppm | TWA: 10 ppm TWA: 25 mg/m ³ (vacated) TWA: 10 ppm (vacated) TWA: 25 mg/m ³ | IDLH: 50 ppm TWA: 10 ppm TWA: 25 mg/m ³ STEL: 15 ppm STEL: 37 mg/m ³ |

Engineering measures Showers
Eyewash stations
Ventilation systems

Personal protective equipment

Eye/face protection

No special protective equipment required.

Skin and body protection

No special protective equipment required.

Respiratory protection

If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

Hygiene measures Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|----------------------------------|---------------------------|------------------------------------|---------------------------|
| Appearance | No information available. | Odor | No information available. |
| Odor Threshold | No information available | Physical State @20°C | No information available |
| pH | No information available | Autoignition temperature | No information available |
| Flash point | No information available | Boiling point/boiling range | No information available |
| Decomposition temperature | No information available | Flammability Limits in Air | No information available |
| Melting point/range | No information available | solubility | No information available. |
| Explosion limits | No information available | Vapor Pressure @20°C (kPa) | No information available |
| Specific Gravity | No data available | VOC Content(%) | 0.10000001490116 |
| Evaporation rate | No information available | | |
| Vapor density | No data available | | |

10. STABILITY AND REACTIVITY

Stability Stable under recommended storage conditions.

Incompatible products None known based on information supplied.

Conditions to avoid None known based on information supplied.

Hazardous decomposition products None known based on information supplied.

Hazardous polymerization Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product Information Product does not present an acute toxicity hazard based on known or supplied information

Chronic toxicity

Target Organ Effects None known.

12. ECOLOGICAL INFORMATION

Ecotoxicity

The environmental impact of this product has not been fully investigated.

| Chemical Name | Toxicity to algae | Toxicity to fish | Toxicity to microorganisms | Toxicity to daphnia and other aquatic invertebrates |
|----------------------|-------------------|--|----------------------------|--|
| Acetic acid | | 79: 96 h Pimephales promelas mg/L LC50 static 75: 96 h Lepomis macrochirus mg/L LC50 static | | 47: 24 h Daphnia magna mg/L EC50 65: 48 h Daphnia magna mg/L EC50 Static |
| Chemical Name | | log Pow | | |
| Acetic acid | | -0.31 | | |

13. DISPOSAL CONSIDERATIONS

Waste disposal methods This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated packaging Do not re-use empty containers.

This product contains one or more substances that are listed with the State of California as a hazardous waste.

| Chemical Name | California Hazardous Waste Status |
|---------------|-----------------------------------|
| Acetic acid | Toxic Corrosive Ignitable |

14. TRANSPORT INFORMATION

DOT Not dangerous goods

IATA Not dangerous goods

ADR Not dangerous goods

15. REGULATORY INFORMATION

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

| | |
|--|----|
| Acute Health Hazard | no |
| Chronic Health Hazard | no |
| Fire Hazard | no |
| Sudden Release of Pressure Hazard | no |
| Reactive Hazard | no |

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

| Chemical Name | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants | CWA - Hazardous Substances |
|---------------|-----------------------------|------------------------|---------------------------|----------------------------|
| Acetic acid | 5000 lb | | | X |

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

| Chemical Name | Hazardous Substances RQs | Extremely Hazardous Substances RQs | RQ |
|---------------|--------------------------|------------------------------------|---|
| Acetic acid | 5000 lb | | RQ 5000 lb final RQ RQ 2270 kg final RQ |

U.S. State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

| Chemical Name | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|---------------|---------------|------------|--------------|----------|--------------|
| Acetic acid | X | X | X | | X |

International Regulations

| Chemical Name | Carcinogen Status | Exposure limits |
|---------------|-------------------|--|
| Acetic acid | | Mexico: TWA 10 ppm Mexico: TWA 25 mg/m ³ Mexico: STEL 15 ppm Mexico: STEL 37 mg/m ³ |

WHMIS Note:

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

16. OTHER INFORMATION**Full text of H-Statements referred to under sections 2 and 3**

H314 - Causes severe skin burns and eye damage H318 - Causes serious eye damage H226 - Flammable liquid and vapor

Revision Date

02-May-2017

Revision Note

No information available.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of MSDS