

SAFETY DATA SHEET

Creation Date 29-Oct-2014

Revision Date 29-Oct-2014

Revision Number 1

1. Identification

Product Name Mucicarmine Stock Solution

Cat No. : 88037

Synonyms No information available

Recommended Use Laboratory chemicals.

Uses advised against No Information available

Details of the supplier of the safety data sheet

Company

Richard Allan Scientific
A Subsidiary of Thermo Fisher Scientific
4481 Campus Drive
Kalamazoo, MI 49008
Tel: (800) 522-7270

Emergency Telephone Number

Chemtrec US: (800) 424-9300
Chemtrec EU: 001 (202) 483-7616

2. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

| | |
|--|-------------|
| Flammable liquids | Category 3 |
| Carcinogenicity | Category 1A |
| Specific target organ toxicity (single exposure) | Category 1 |
| Target Organs - Central nervous system (CNS). | |
| Specific target organ toxicity - (repeated exposure) | Category 2 |
| Target Organs - Kidney, Liver. | |

Label Elements

Signal Word

Danger

Hazard Statements

Flammable liquid and vapor
May cause drowsiness or dizziness
May cause cancer
Causes damage to organs
May cause damage to organs through prolonged or repeated exposure



Precautionary Statements**Prevention**

Obtain special instructions before use
 Do not handle until all safety precautions have been read and understood
 Use personal protective equipment as required
 Do not breathe dust/fume/gas/mist/vapors/spray
 Wash face, hands and any exposed skin thoroughly after handling
 Do not eat, drink or smoke when using this product
 Use only outdoors or in a well-ventilated area
 Keep away from heat/sparks/open flames/hot surfaces. - No smoking
 Keep container tightly closed
 Ground/bond container and receiving equipment
 Use explosion-proof electrical/ventilating/lighting/equipment
 Use only non-sparking tools
 Take precautionary measures against static discharge
 Keep cool

Response

IF exposed: Call a POISON CENTER or doctor/physician

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
 Call a POISON CENTER or doctor/physician if you feel unwell

Skin

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower

Fire

In case of fire: Use CO₂, dry chemical, or foam for extinction

Storage

Store locked up
 Store in a well-ventilated place. Keep container tightly closed

Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)**Other hazards**

WARNING! This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.

3. Composition / information on ingredients

| Component | CAS-No | Weight % |
|--------------------|------------|----------|
| Water | 7732-18-5 | 45-50 |
| Ethyl alcohol | 64-17-5 | 40-45 |
| Methyl alcohol | 67-56-1 | 1-3 |
| Isopropyl alcohol | 67-63-0 | 1-3 |
| Carmine | 1390-65-4 | <1 |
| Aluminum hydroxide | 21645-51-2 | <1 |
| Ammonium chloride | 12125-02-9 | <1 |

4. First-aid measures

Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

Skin Contact

Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

| | |
|--|---|
| Inhalation | Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device. Immediate medical attention is required. |
| Ingestion | Do not induce vomiting. Call a physician or Poison Control Center immediately. |
| Most important symptoms/effects | Breathing difficulties. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting |
| Notes to Physician | Treat symptomatically |

5. Fire-fighting measures

| | |
|---|--|
| Suitable Extinguishing Media | CO ₂ , dry chemical, dry sand, alcohol-resistant foam. Cool closed containers exposed to fire with water spray. |
| Unsuitable Extinguishing Media | Water may be ineffective |
| Flash Point | estimated: 24 °C / 75.2 °F |
| Method - | No information available |
| Autoignition Temperature | No information available |
| Explosion Limits | |
| Upper | No data available |
| Lower | No data available |
| Sensitivity to Mechanical Impact | No information available |
| Sensitivity to Static Discharge | No information available |

Specific Hazards Arising from the Chemical

Flammable. Risk of ignition. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Containers may explode when heated. Keep product and empty container away from heat and sources of ignition.

Hazardous Combustion Products

Carbon monoxide (CO) Carbon dioxide (CO₂)

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. Thermal decomposition can lead to release of irritating gases and vapors.

NFPA

| Health | Flammability | Instability | Physical hazards |
|--------|--------------|-------------|------------------|
| 3 | 3 | 0 | N/A |

6. Accidental release measures

| | |
|---|---|
| Personal Precautions | Use personal protective equipment. Remove all sources of ignition. Take precautionary measures against static discharges. Do not get in eyes, on skin, or on clothing. |
| Environmental Precautions | Should not be released into the environment. See Section 12 for additional ecological information. |
| Methods for Containment and Clean Up | Remove all sources of ignition. Soak up with inert absorbent material. Take precautionary measures against static discharges. Keep in suitable, closed containers for disposal. |

7. Handling and storage

| | |
|-----------------|---|
| Handling | Wear personal protective equipment. Keep away from open flames, hot surfaces and sources of ignition. Do not breathe vapors or spray mist. Do not get in eyes, on skin, or on clothing. Do not ingest. Take precautionary measures against static discharges. |
| Storage | Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat and sources of ignition. Flammables area. |

8. Exposure controls / personal protection

Exposure Guidelines

| Component | ACGIH TLV | OSHA PEL | NIOSH IDLH |
|--------------------|---|--|---|
| Ethyl alcohol | STEL: 1000 ppm | (Vacated) TWA: 1000 ppm (Vacated) TWA: 1900 mg/m ³ TWA: 1000 ppm TWA: 1900 mg/m ³ | IDLH: 3300 ppm TWA: 1000 ppm TWA: 1900 mg/m ³ |
| Methyl alcohol | TWA: 200 ppm STEL: 250 ppm Skin | (Vacated) TWA: 200 ppm (Vacated) TWA: 260 mg/m ³ (Vacated) STEL: 250 ppm (Vacated) STEL: 325 mg/m ³ Skin TWA: 200 ppm TWA: 260 mg/m ³ | IDLH: 6000 ppm TWA: 200 ppm TWA: 260 mg/m ³ STEL: 250 ppm STEL: 325 mg/m ³ |
| Isopropyl alcohol | TWA: 200 ppm STEL: 400 ppm | (Vacated) TWA: 400 ppm (Vacated) TWA: 980 mg/m ³ (Vacated) STEL: 500 ppm (Vacated) STEL: 1225 mg/m ³ TWA: 400 ppm TWA: 980 mg/m ³ | IDLH: 2000 ppm TWA: 400 ppm TWA: 980 mg/m ³ STEL: 500 ppm STEL: 1225 mg/m ³ |
| Aluminum hydroxide | TWA: 1 mg/m ³ | | |
| Ammonium chloride | TWA: 10 mg/m ³ STEL: 20 mg/m ³ | (Vacated) TWA: 10 mg/m ³ (Vacated) STEL: 20 mg/m ³ | TWA: 10 mg/m ³ STEL: 20 mg/m ³ |

| Component | Quebec | Mexico OEL (TWA) | Ontario TWA/EV |
|--------------------|--|---|---|
| Ethyl alcohol | TWA: 1000 ppm TWA: 1880 mg/m ³ | TWA: 1000 ppm TWA: 1900 mg/m ³ | STEL: 1000 ppm |
| Methyl alcohol | TWA: 200 ppm TWA: 262 mg/m ³ STEL: 250 ppm STEL: 328 mg/m ³ Skin | TWA: 200 ppm TWA: 260 mg/m ³ STEL: 250 ppm STEL: 310 mg/m ³ | TWA: 200 ppm STEL: 250 ppm Skin |
| Isopropyl alcohol | TWA: 400 ppm TWA: 985 mg/m ³ STEL: 500 ppm STEL: 1230 mg/m ³ | TWA: 400 ppm TWA: 980 mg/m ³ STEL: 500 ppm STEL: 1225 mg/m ³ | TWA: 200 ppm STEL: 400 ppm |
| Aluminum hydroxide | | | TWA: 1 mg/m ³ |
| Ammonium chloride | TWA: 10 mg/m ³ STEL: 20 mg/m ³ | TWA: 10 mg/m ³ STEL: 20 mg/m ³ | TWA: 10 mg/m ³ STEL: 20 mg/m ³ |

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

Engineering Measures

Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating/lighting/equipment. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment

Eye/face Protection

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State
Appearance

Liquid
No information available

| | |
|--|----------------------------|
| Odor | Alcohol-like |
| Odor Threshold | No information available |
| pH | No information available |
| Melting Point/Range | No data available |
| Boiling Point/Range | Not applicable |
| Flash Point | estimated: 24 °C / 75.2 °F |
| Evaporation Rate | No information available |
| Flammability (solid,gas) | No information available |
| Flammability or explosive limits | |
| Upper | No data available |
| Lower | No data available |
| Vapor Pressure | No information available |
| Vapor Density | No information available |
| Relative Density | No information available |
| Solubility | No information available |
| Partition coefficient; n-octanol/water | No data available |
| Autoignition Temperature | No information available |
| Decomposition Temperature | No information available |
| Viscosity | No information available |
| Molecular Formula | Solution |

10. Stability and reactivity

| | |
|---|--|
| Reactive Hazard | None known, based on information available |
| Stability | Stable under normal conditions. |
| Conditions to Avoid | Incompatible products. Heat, flames and sparks. |
| Incompatible Materials | Strong oxidizing agents, Peroxides, Metals, Acids, Acid anhydrides, Acid chlorides |
| Hazardous Decomposition Products | Carbon monoxide (CO), Carbon dioxide (CO ₂) |
| Hazardous Polymerization | Hazardous polymerization does not occur. |
| Hazardous Reactions | None under normal processing. |

11. Toxicological information

Acute Toxicity

| | |
|----------------------------|---|
| Product Information | No acute toxicity information is available for this product |
| Oral LD50 | Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg. |
| Dermal LD50 | Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg. |
| Vapor LC50 | Based on ATE data, the classification criteria are not met. ATE > 20 mg/l. |

Component Information

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|--------------------|--------------------|---|-----------------------|
| Ethyl alcohol | Not listed | Not listed | 20000 ppm/10H (Rat) |
| Methyl alcohol | 6200 mg/kg (Rat) | Not listed | 22500 ppm (Rat) 8 h |
| Isopropyl alcohol | 5840 mg/kg (Rat) | 13900 mg/kg (Rat) 12870 mg/kg (Rabbit) | 72.6 mg/L (Rat) 4 h |
| Aluminum hydroxide | 5000 mg/kg (Rat) | Not listed | Not listed |
| Ammonium chloride | 1650 mg/kg (Rat) | > 2000 mg/kg | Not listed |

| | |
|---|--------------------------|
| Toxicologically Synergistic Products | No information available |
|---|--------------------------|

Delayed and immediate effects as well as chronic effects from short and long-term exposure

| | |
|----------------------|--------------------------|
| Irritation | No information available |
| Sensitization | No information available |

Carcinogenicity

The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Component | CAS-No | IARC | NTP | ACGIH | OSHA | Mexico |
|--------------------|------------|------------|------------|------------|------------|------------|
| Water | 7732-18-5 | Not listed | Not listed | Not listed | Not listed | Not listed |
| Ethyl alcohol | 64-17-5 | Group 1 | Not listed | A3 | X | Not listed |
| Methyl alcohol | 67-56-1 | Not listed | Not listed | Not listed | Not listed | Not listed |
| Isopropyl alcohol | 67-63-0 | Not listed | Not listed | Not listed | Not listed | Not listed |
| Carmine | 1390-65-4 | Not listed | Not listed | Not listed | Not listed | Not listed |
| Aluminum hydroxide | 21645-51-2 | Not listed | Not listed | Not listed | Not listed | Not listed |
| Ammonium chloride | 12125-02-9 | Not listed | Not listed | Not listed | Not listed | Not listed |

IARC: (International Agency for Research on Cancer)

IARC: (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans

Group 2A - Probably Carcinogenic to Humans

Group 2B - Possibly Carcinogenic to Humans

A1 - Known Human Carcinogen

A2 - Suspected Human Carcinogen

A3 - Animal Carcinogen

ACGIH: (American Conference of Governmental Industrial Hygienists)

ACGIH: (American Conference of Governmental Industrial Hygienists)

Mutagenic Effects

No information available

Reproductive Effects

Adverse reproductive effects have occurred in humans.

Developmental Effects

Substances known to cause developmental toxicity in humans.

Teratogenicity

Teratogenic effects have occurred in humans.

STOT - single exposure

Central nervous system (CNS)

STOT - repeated exposure

Kidney Liver

Aspiration hazard

No information available

Symptoms / effects, both acute and delayed

Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting

Endocrine Disruptor Information

No information available

Other Adverse Effects

Tumorigenic effects have been reported in experimental animals. See actual entry in RTECS for complete information.

12. Ecological information

Ecotoxicity

Do not empty into drains.

| Component | Freshwater Algae | Freshwater Fish | Microtox | Water Flea |
|-------------------|--|---|---|---|
| Ethyl alcohol | EC50 (72h) = 275 mg/l (Chlorella vulgaris) | Fathead minnow (Pimephales promelas) LC50 = 14200 mg/l/96h | Photobacterium phosphoreum: EC50 = 34634 mg/L/30 min Photobacterium phosphoreum: EC50 = 35470 mg/L/5 min | EC50 = 9268 mg/L/48h EC50 = 10800 mg/L/24h |
| Methyl alcohol | Not listed | Pimephales promelas: LC50 > 10000 mg/L 96h | EC50 = 39000 mg/L 25 min EC50 = 40000 mg/L 15 min EC50 = 43000 mg/L 5 min | EC50 > 10000 mg/L 24h |
| Isopropyl alcohol | 1000 mg/L EC50 > 72 h 1000 mg/L EC50 > 96 h | 1400000 µg/L LC50 96 h 11130 mg/L LC50 96 h 9640 mg/L LC50 96 h | = 35390 mg/L EC50 Photobacterium phosphoreum 5 min | 13299 mg/L EC50 = 48 h 9714 mg/L EC50 = 24 h |
| Ammonium chloride | - | Cyprinus carpio: LC50 = 209 mg/L | - | EC50 = 202 mg/L/24h |

Persistence and Degradability

No information available

Bioaccumulation/ Accumulation

No information available.

Mobility

| Component | log Pow |
|-------------------|---------|
| Ethyl alcohol | -0.32 |
| Methyl alcohol | -0.74 |
| Isopropyl alcohol | 0.05 |
| Ammonium chloride | -4.38 |

13. Disposal considerations

Waste Disposal 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.

| Component | RCRA - U Series Wastes | RCRA - P Series Wastes |
|--------------------------|------------------------|------------------------|
| Methyl alcohol - 67-56-1 | U154 | - |

14. Transport information**DOT**

UN-No UN1170
 Proper Shipping Name ETHANOL
 Hazard Class 3
 Packing Group III

TDG

UN-No UN1170
 Proper Shipping Name ETHANOL
 Hazard Class 3
 Packing Group III

IATA

UN-No UN1170
 Proper Shipping Name ETHANOL
 Hazard Class 3
 Packing Group III

IMDG/IMO

UN-No UN1170
 Proper Shipping Name ETHANOL
 Hazard Class 3
 Packing Group III

15. Regulatory information

All of the components in the product are on the following Inventory lists: Australia X = listed China Canada The product is classified and labeled according to EC directives or corresponding national laws The product is classified and labeled in accordance with Directive 1999/45/EC Europe Korea Philippines

International Inventories

| Component | TSCA | DSL | NDSL | EINECS | ELINCS | NLP | PICCS | ENCS | AICS | IECSC | KECL |
|--------------------|------|-----|------|-----------|--------|-----|-------|------|------|-------|------|
| Water | X | X | - | 231-791-2 | - | | X | - | X | X | X |
| Ethyl alcohol | X | X | - | 200-578-6 | - | | X | X | X | X | X |
| Methyl alcohol | X | X | - | 200-659-6 | - | | X | X | X | X | X |
| Isopropyl alcohol | X | X | - | 200-661-7 | - | | X | X | X | X | X |
| Carmine | - | X | - | 215-724-4 | - | | X | - | X | X | X |
| Aluminum hydroxide | X | X | - | 244-492-7 | - | | X | X | X | X | X |
| Ammonium chloride | X | X | - | 235-186-4 | - | | X | X | X | X | X |

Legend:

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313

| Component | CAS-No | Weight % | SARA 313 - Threshold Values % |
|-------------------|------------|----------|-------------------------------|
| Methyl alcohol | 67-56-1 | 1-3 | 1.0 |
| Isopropyl alcohol | 67-63-0 | 1-3 | 1.0 |
| Ammonium chloride | 12125-02-9 | <1 | 1.0 |

SARA 311/312 Hazardous Categorization

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

Clean Water Act

| Component | CWA - Hazardous Substances | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants |
|-------------------|----------------------------|-----------------------------|------------------------|---------------------------|
| Ammonium chloride | X | 5000 lb | - | - |

Clean Air Act

| Component | HAPS Data | Class 1 Ozone Depletors | Class 2 Ozone Depletors |
|----------------|-----------|-------------------------|-------------------------|
| Methyl alcohol | X | | - |

OSHA Occupational Safety and Health Administration

Not applicable

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

| Component | Hazardous Substances RQs | CERCLA EHS RQs |
|-------------------|--------------------------|----------------|
| Methyl alcohol | 5000 lb | - |
| Ammonium chloride | 5000 lb | - |

California Proposition 65

This product contains the following Proposition 65 chemicals: Ethyl alcohol is only a considered a Proposition 65 developmental hazard when it is ingested as an alcoholic beverage

| Component | CAS-No | California Prop. 65 | Prop 65 NSRL | Category |
|----------------|---------|---------------------|--------------|--------------------------|
| Ethyl alcohol | 64-17-5 | Developmental | - | Developmental Carcinogen |
| Methyl alcohol | 67-56-1 | Developmental | - | Developmental |

State Right-to-Know

| Component | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|-------------------|---------------|------------|--------------|----------|--------------|
| Ethyl alcohol | X | X | X | X | X |
| Methyl alcohol | X | X | X | X | X |
| Isopropyl alcohol | X | X | X | - | X |
| Ammonium chloride | X | X | X | - | X |

U.S. Department of Transportation

Reportable Quantity (RQ): Y
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security

This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade Serious risk, Grade 3

Canada

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

WHMIS Hazard Class B2 Flammable liquid
D1B Toxic materials
D2A Very toxic materials

**16. Other information**

Prepared By Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com Richard Allan Scientific
A Subsidiary of Thermo Fisher Scientific
Tel: (800) 522-7270

Creation Date 29-Oct-2014
Revision Date 29-Oct-2014
Print Date 29-Oct-2014
Revision Summary This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Disclaimer

The information provided on 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.

End of SDS

SAFETY DATA SHEET

Creation Date 04-Nov-2014

Revision Date 04-Nov-2014

Revision Number 1

1. Identification

Product Name Tartrazine Stain Solution

Cat No. : 88012

Synonyms No information available

Recommended Use Laboratory chemicals.

Uses advised against No Information available

Details of the supplier of the safety data sheet

Company

Richard Allan Scientific
A Subsidiary of Thermo Fisher Scientific
4481 Campus Drive
Kalamazoo, MI 49008
Tel: (800) 522-7270

Emergency Telephone Number

Chemtrec US: (800) 424-9300
Chemtrec EU: 001 (202) 483-7616

2. Hazard(s) identification

Classification

Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Based on available data, the classification criteria are not met

Label Elements

None required

Hazards not otherwise classified (HNOC)

None identified

3. Composition / information on ingredients

| Component | CAS-No | Weight % |
|-------------------|------------|----------|
| Diazolidinyl urea | 78491-02-8 | <1 |
| Acetic acid | 64-19-7 | <1 |
| Water | 7732-18-5 | > 99 |
| FD&C yellow No. 5 | 1934-21-0 | <1 |

4. First-aid measures

Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

Skin Contact

Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.

| | |
|---|---|
| Inhalation | Move to fresh air. If breathing is difficult, give oxygen. Get medical attention immediately if symptoms occur. |
| Ingestion | Do not induce vomiting. Obtain medical attention. |
| Most important symptoms/effects Notes to Physician | No information available. Treat symptomatically |

5. Fire-fighting measures

| | |
|---|---|
| Suitable Extinguishing Media | Substance is nonflammable; use agent most appropriate to extinguish surrounding fire. |
| Unsuitable Extinguishing Media | No information available |
| Flash Point | Not applicable |
| Method - | No information available |
| Autoignition Temperature | No information available |
| Explosion Limits | |
| Upper | No data available |
| Lower | No data available |
| Sensitivity to Mechanical Impact | No information available |
| Sensitivity to Static Discharge | No information available |

Specific Hazards Arising from the Chemical

Thermal decomposition can lead to release of irritating gases and vapors.

Hazardous Combustion Products

Carbon monoxide (CO) Carbon dioxide (CO₂)

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.

NFPA

Health
1

Flammability
0

Instability
0

Physical hazards
N/A

6. Accidental release measures

| | |
|----------------------------------|---|
| Personal Precautions | Use personal protective equipment. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. |
| Environmental Precautions | Should not be released into the environment. See Section 12 for additional ecological information. |

Methods for Containment and Clean Up Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

7. Handling and storage

| | |
|-----------------|--|
| Handling | Wear personal protective equipment. Ensure adequate ventilation. Do not breathe vapors or spray mist. Avoid contact with skin and eyes. Do not ingest. |
| Storage | Keep containers tightly closed in a dry, cool and well-ventilated place. |

8. Exposure controls / personal protection

Exposure Guidelines

| Component | ACGIH TLV | OSHA PEL | NIOSH IDLH |
|-------------|--|--|--|
| Acetic acid | TWA: 10 ppm STEL: 15 ppm | (Vacated) TWA: 10 ppm (Vacated) TWA: 25 mg/m ³ TWA: 10 ppm TWA: 25 mg/m ³ | IDLH: 50 ppm TWA: 10 ppm TWA: 25 mg/m ³ STEL: 15 ppm STEL: 37 mg/m ³ |
| Component | Quebec | Mexico OEL (TWA) | Ontario TWAEV |
| Acetic acid | TWA: 10 ppm TWA: 25 mg/m ³ STEL: 15 ppm STEL: 37 mg/m ³ | TWA: 10 ppm TWA: 25 mg/m ³ STEL: 15 ppm STEL: 37 mg/m ³ | TWA: 10 ppm STEL: 15 ppm |

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

Engineering Measures

Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment**Eye/face Protection**

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

| | |
|---|--------------------------|
| Physical State | Liquid |
| Appearance | Yellow |
| Odor | No information available |
| Odor Threshold | No information available |
| pH | No information available |
| Melting Point/Range | No data available |
| Boiling Point/Range | No information available |
| Flash Point | Not applicable |
| Evaporation Rate | No information available |
| Flammability (solid,gas) | No information available |
| Flammability or explosive limits | |
| Upper | No data available |
| Lower | No data available |
| Vapor Pressure | No information available |
| Vapor Density | No information available |
| Relative Density | No information available |
| Solubility | Soluble in water |
| Partition coefficient; n-octanol/water | No data available |
| Autoignition Temperature | No information available |
| Decomposition Temperature | No information available |
| Viscosity | No information available |

10. Stability and reactivity

| | |
|----------------------------|--|
| Reactive Hazard | None known, based on information available |
| Stability | Stable under normal conditions. |
| Conditions to Avoid | Incompatible products. Excess heat. |

| | |
|---|---|
| Incompatible Materials | Strong oxidizing agents |
| Hazardous Decomposition Products | Carbon monoxide (CO), Carbon dioxide (CO ₂) |
| Hazardous Polymerization | Hazardous polymerization does not occur. |
| Hazardous Reactions | None under normal processing. |

11. Toxicological information

Acute Toxicity

Product Information No acute toxicity information is available for this product

Component Information

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

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation No information available

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Component | CAS-No | IARC | NTP | ACGIH | OSHA | Mexico |
|-------------------|------------|------------|------------|------------|------------|------------|
| Diazolidinyl urea | 78491-02-8 | Not listed | Not listed | Not listed | Not listed | Not listed |
| Acetic acid | 64-19-7 | Not listed | Not listed | Not listed | Not listed | Not listed |
| Water | 7732-18-5 | Not listed | Not listed | Not listed | Not listed | Not listed |
| FD&C yellow No. 5 | 1934-21-0 | Not listed | Not listed | Not listed | Not listed | Not listed |

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure None known

STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects, both acute and delayed No information available

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information.

12. Ecological information

Ecotoxicity

Do not empty into drains.

| Component | Freshwater Algae | Freshwater Fish | Microtox | Water Flea |
|-----------|------------------|-----------------|----------|------------|
| | | | | |

| | | | | |
|-------------|---|--|---|--------------------|
| Acetic acid | - | Pimephales promelas: LC50 = 88 mg/L/96h Lepomis macrochirus: LC50 = 75 mg/L/96h | Photobacterium phosphoreum: EC50 = 8.8 mg/L/15 min Photobacterium phosphoreum: EC50 = 8.8 mg/L/25 min Photobacterium phosphoreum: EC50 = 8.8 mg/L/5 min | EC50 = 95 mg/L/24h |
|-------------|---|--|---|--------------------|

Persistence and Degradability No information available

Bioaccumulation/ Accumulation No information available.

Mobility .

| Component | log Pow |
|-------------|---------|
| Acetic acid | -0.2 |

13. Disposal considerations

Waste Disposal 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.

14. Transport information

| | |
|-----------------|---------------|
| DOT | Not regulated |
| TDG | Not regulated |
| IATA | Not regulated |
| IMDG/IMO | Not regulated |

15. Regulatory information

All of the components in the product are on the following Inventory lists: Australia X = listed China Canada The product is classified and labeled according to EC directives or corresponding national laws The product is classified and labeled in accordance with Directive 1999/45/EC Europe TSCA Korea Philippines

International Inventories

| Component | TSCA | DSL | NDSL | EINECS | ELINCS | NLP | PICCS | ENCS | AICS | IECSC | KECL |
|-------------------|------|-----|------|-----------|--------|-----|-------|------|------|-------|------|
| Diazolidinyl urea | X | X | - | 278-928-2 | - | | X | - | X | X | X |
| Acetic acid | X | X | - | 200-580-7 | - | | X | X | X | X | X |
| Water | X | X | - | 231-791-2 | - | | X | - | X | X | X |
| FD&C yellow No. 5 | X | X | - | 217-699-5 | - | | X | X | X | X | X |

Legend:

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313 Not applicable

SARA 311/312 Hazardous Categorization

Acute Health Hazard No
 Chronic Health Hazard Yes
 Fire Hazard No
 Sudden Release of Pressure Hazard No
 Reactive Hazard No

Clean Water Act

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

Clean Air Act Not applicable

OSHA Occupational Safety and Health Administration
 Not applicable

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

| Component | Hazardous Substances RQs | CERCLA EHS RQs |
|-------------|--------------------------|----------------|
| Acetic acid | 5000 lb | - |

California Proposition 65 This product does not contain any Proposition 65 chemicals

State Right-to-Know

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

U.S. Department of Transportation

Reportable Quantity (RQ): Y
 DOT Marine Pollutant N
 DOT Severe Marine Pollutant N

U.S. Department of Homeland Security

This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Canada

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

WHMIS Hazard Class Non-controlled

16. Other information

Prepared By Regulatory Affairs
 Richard Allan Scientific
 A Subsidiary of Thermo Fisher Scientific
 Tel: (800) 522-7270

Creation Date 04-Nov-2014
Revision Date 04-Nov-2014
Print Date 04-Nov-2014

Revision Summary

This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Disclaimer

The information provided on 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.

End of SDS

SAFETY DATA SHEET

Creation Date 05-Nov-2014

Revision Date 05-Nov-2014

Revision Number 1

1. Identification

Product Name Weigert's Iron Hematoxylin, Part A

Cat No. : 88028

Synonyms No information available

Recommended Use Laboratory chemicals.

Uses advised against No Information available

Details of the supplier of the safety data sheet

Company

Richard Allan Scientific
A Subsidiary of Thermo Fisher Scientific
4481 Campus Drive
Kalamazoo, MI 49008
Tel: (800) 522-7270

Emergency Telephone Number

Chemtrec US: (800) 424-9300
Chemtrec EU: 001 (202) 483-7616

2. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

| | |
|--|-------------|
| Flammable liquids | Category 1 |
| Carcinogenicity | Category 1A |
| Specific target organ toxicity (single exposure) | Category 1 |
| Target Organs - Central nervous system (CNS), Optic nerve. | |
| Specific target organ toxicity - (repeated exposure) | Category 1 |
| Target Organs - Kidney, Liver. | |

Label Elements

Signal Word

Danger

Hazard Statements

Extremely flammable liquid and vapor
May cause drowsiness or dizziness
May cause cancer
Causes damage to organs
Causes damage to organs through prolonged or repeated exposure



Precautionary Statements**Prevention**

Obtain special instructions before use
 Do not handle until all safety precautions have been read and understood
 Use personal protective equipment as required
 Do not breathe dust/fume/gas/mist/vapors/spray
 Wash face, hands and any exposed skin thoroughly after handling
 Do not eat, drink or smoke when using this product
 Use only outdoors or in a well-ventilated area
 Keep away from heat/sparks/open flames/hot surfaces. - No smoking
 Keep container tightly closed
 Ground/bond container and receiving equipment
 Use explosion-proof electrical/ventilating/lighting/equipment
 Use only non-sparking tools
 Take precautionary measures against static discharge
 Keep cool

Response

IF exposed: Call a POISON CENTER or doctor/physician

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
 Call a POISON CENTER or doctor/physician if you feel unwell

Skin

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower

Fire

In case of fire: Use CO2, dry chemical, or foam for extinction

Storage

Store locked up
 Store in a well-ventilated place. Keep container tightly closed

Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)**Other hazards**

Poison, may be fatal or cause blindness if swallowed. Vapor harmful. Cannot be made non-poisonous. WARNING! This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.

3. Composition / information on ingredients

| Component | CAS-No | Weight % |
|-------------------|-----------|----------|
| Hematoxylin | 517-28-2 | 1-3 |
| Isopropyl alcohol | 67-63-0 | 3-5 |
| Ethyl alcohol | 64-17-5 | 79 - 80 |
| Methyl alcohol | 67-56-1 | 3-5 |
| Water | 7732-18-5 | 8 - 11 |

4. First-aid measures

Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

Skin Contact

Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.

Inhalation

Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device. Immediate medical attention is required.

| | |
|--|---|
| Ingestion | Do not induce vomiting. Call a physician or Poison Control Center immediately. |
| Most important symptoms/effects | Breathing difficulties. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting |
| Notes to Physician | Treat symptomatically |

5. Fire-fighting measures

| | |
|---|--|
| Suitable Extinguishing Media | CO ₂ , dry chemical, dry sand, alcohol-resistant foam. Cool closed containers exposed to fire with water spray. |
| Unsuitable Extinguishing Media | Water may be ineffective |
| Flash Point | 15.4 °C / 59.7 °F |
| Method - | No information available |
| Autoignition Temperature | No information available |
| Explosion Limits | |
| Upper | No data available |
| Lower | No data available |
| Sensitivity to Mechanical Impact | No information available |
| Sensitivity to Static Discharge | No information available |

Specific Hazards Arising from the Chemical

Flammable. Risk of ignition. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Containers may explode when heated. Keep product and empty container away from heat and sources of ignition.

Hazardous Combustion Products

Carbon monoxide (CO) Carbon dioxide (CO₂) Formaldehyde

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. Thermal decomposition can lead to release of irritating gases and vapors.

NFPA

| | | | |
|--------------------|--------------------------|-------------------------|--------------------------------|
| Health 3 | Flammability 4 | Instability 0 | Physical hazards N/A |
|--------------------|--------------------------|-------------------------|--------------------------------|

6. Accidental release measures

| | |
|---|---|
| Personal Precautions | Use personal protective equipment. Remove all sources of ignition. Take precautionary measures against static discharges. Do not get in eyes, on skin, or on clothing. |
| Environmental Precautions | Should not be released into the environment. See Section 12 for additional ecological information. |
| Methods for Containment and Clean Up | Remove all sources of ignition. Soak up with inert absorbent material. Take precautionary measures against static discharges. Keep in suitable, closed containers for disposal. |

7. Handling and storage

| | |
|-----------------|---|
| Handling | Wear personal protective equipment. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharges. Do not breathe vapors or spray mist. Do not get in eyes, on skin, or on clothing. Do not ingest. |
| Storage | Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat and sources of ignition. Flammables area. |

8. Exposure controls / personal protection

Exposure Guidelines

| Component | ACGIH TLV | OSHA PEL | NIOSH IDLH |
|-------------------|---------------------------------------|--|---|
| Isopropyl alcohol | TWA: 200 ppm STEL: 400 ppm | (Vacated) TWA: 400 ppm (Vacated) TWA: 980 mg/m ³ (Vacated) STEL: 500 ppm (Vacated) STEL: 1225 mg/m ³ TWA: 400 ppm TWA: 980 mg/m ³ | IDLH: 2000 ppm TWA: 400 ppm TWA: 980 mg/m ³ STEL: 500 ppm STEL: 1225 mg/m ³ |
| Ethyl alcohol | STEL: 1000 ppm | (Vacated) TWA: 1000 ppm (Vacated) TWA: 1900 mg/m ³ TWA: 1000 ppm TWA: 1900 mg/m ³ | IDLH: 3300 ppm TWA: 1000 ppm TWA: 1900 mg/m ³ |
| Methyl alcohol | TWA: 200 ppm STEL: 250 ppm Skin | (Vacated) TWA: 200 ppm (Vacated) TWA: 260 mg/m ³ (Vacated) STEL: 250 ppm (Vacated) STEL: 325 mg/m ³ Skin TWA: 200 ppm TWA: 260 mg/m ³ | IDLH: 6000 ppm TWA: 200 ppm TWA: 260 mg/m ³ STEL: 250 ppm STEL: 325 mg/m ³ |

| Component | Quebec | Mexico OEL (TWA) | Ontario TWAEV |
|-------------------|--|---|---------------------------------------|
| Isopropyl alcohol | TWA: 400 ppm TWA: 985 mg/m ³ STEL: 500 ppm STEL: 1230 mg/m ³ | TWA: 400 ppm TWA: 980 mg/m ³ STEL: 500 ppm STEL: 1225 mg/m ³ | TWA: 200 ppm STEL: 400 ppm |
| Ethyl alcohol | TWA: 1000 ppm TWA: 1880 mg/m ³ | TWA: 1000 ppm TWA: 1900 mg/m ³ | STEL: 1000 ppm |
| Methyl alcohol | TWA: 200 ppm TWA: 262 mg/m ³ STEL: 250 ppm STEL: 328 mg/m ³ Skin | TWA: 200 ppm TWA: 260 mg/m ³ STEL: 250 ppm STEL: 310 mg/m ³ | TWA: 200 ppm STEL: 250 ppm Skin |

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

Engineering Measures

Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating/lighting/equipment. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment**Eye/face Protection**

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State

Liquid

Appearance

No information available

Odor

No information available

Odor Threshold

No information available

pH

No information available

Melting Point/Range

No data available

Boiling Point/Range

No information available

Flash Point

15.4 °C / 59.7 °F

Evaporation Rate

No information available

Flammability (solid,gas)

No information available

Flammability or explosive limits

No information available

| | |
|--|--------------------------|
| Upper | No data available |
| Lower | No data available |
| Vapor Pressure | No information available |
| Vapor Density | No information available |
| Relative Density | No information available |
| Solubility | No information available |
| Partition coefficient; n-octanol/water | No data available |
| Autoignition Temperature | No information available |
| Decomposition Temperature | No information available |
| Viscosity | No information available |

10. Stability and reactivity

| | |
|---|--|
| Reactive Hazard | None known, based on information available |
| Stability | Stable under normal conditions. |
| Conditions to Avoid | Incompatible products. Heat, flames and sparks. |
| Incompatible Materials | Strong oxidizing agents, Peroxides, Acids, Acid anhydrides, Acid chlorides, Metals |
| Hazardous Decomposition Products | Carbon monoxide (CO), Carbon dioxide (CO ₂), Formaldehyde |
| Hazardous Polymerization | Hazardous polymerization does not occur. |
| Hazardous Reactions | None under normal processing. |

11. Toxicological information

Acute Toxicity

| | |
|----------------------------|---|
| Product Information | No acute toxicity information is available for this product |
| Oral LD50 | Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg. |
| Dermal LD50 | Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg. |
| Vapor LC50 | Based on ATE data, the classification criteria are not met. ATE > 20 mg/l. |

Component Information

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|-------------------|--------------------|---|-----------------------|
| Isopropyl alcohol | 5840 mg/kg (Rat) | 13900 mg/kg (Rat) 12870 mg/kg (Rabbit) | 72.6 mg/L (Rat) 4 h |
| Ethyl alcohol | Not listed | Not listed | 20000 ppm/10H (Rat) |
| Methyl alcohol | 6200 mg/kg (Rat) | Not listed | 22500 ppm (Rat) 8 h |

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

| | |
|------------------------|--|
| Irritation | Irritating to eyes and skin |
| Sensitization | No information available |
| Carcinogenicity | The table below indicates whether each agency has listed any ingredient as a carcinogen. |

| Component | CAS-No | IARC | NTP | ACGIH | OSHA | Mexico |
|-------------------|-----------|------------|------------|------------|------------|------------|
| Hematoxylin | 517-28-2 | Not listed | Not listed | Not listed | Not listed | Not listed |
| Isopropyl alcohol | 67-63-0 | Not listed | Not listed | Not listed | Not listed | Not listed |
| Ethyl alcohol | 64-17-5 | Group 1 | Not listed | A3 | X | Not listed |
| Methyl alcohol | 67-56-1 | Not listed | Not listed | Not listed | Not listed | Not listed |
| Water | 7732-18-5 | Not listed | Not listed | Not listed | Not listed | Not listed |

IARC: (International Agency for Research on Cancer)

IARC: (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans

Group 2A - Probably Carcinogenic to Humans

Group 2B - Possibly Carcinogenic to Humans

ACGIH: (American Conference of Governmental Industrial Hygienists)

A1 - Known Human Carcinogen
 A2 - Suspected Human Carcinogen
 A3 - Animal Carcinogen
 ACGIH: (American Conference of Governmental Industrial Hygienists)

| | |
|---|---|
| Mutagenic Effects | No information available |
| Reproductive Effects | Adverse reproductive effects have occurred in humans. |
| Developmental Effects | Substances known to cause developmental toxicity in humans. |
| Teratogenicity | Teratogenic effects have occurred in humans. |
| STOT - single exposure | Central nervous system (CNS) Optic nerve |
| STOT - repeated exposure | Kidney Liver |
| Aspiration hazard | No information available |
| Symptoms / effects, both acute and delayed | Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting |
| Endocrine Disruptor Information | No information available |
| Other Adverse Effects | Tumorigenic effects have been reported in experimental animals. See actual entry in RTECS for complete information. |

12. Ecological information

Ecotoxicity

Do not empty into drains.

| Component | Freshwater Algae | Freshwater Fish | Microtox | Water Flea |
|-------------------|--|--|---|---|
| Isopropyl alcohol | 1000 mg/L EC50 > 72 h 1000 mg/L EC50 > 96 h | 1400000 µg/L LC50 96 h 11130 mg/L LC50 96 h 9640 mg/L LC50 96 h | = 35390 mg/L EC50 Photobacterium phosphoreum 5 min | 13299 mg/L EC50 = 48 h 9714 mg/L EC50 = 24 h |
| Ethyl alcohol | EC50 (72h) = 275 mg/l (Chlorella vulgaris) | Fathead minnow (Pimephales promelas) LC50 = 14200 mg/l/96h | Photobacterium phosphoreum: EC50 = 34634 mg/L/30 min Photobacterium phosphoreum: EC50 = 35470 mg/L/5 min | EC50 = 9268 mg/L/48h EC50 = 10800 mg/L/24h |
| Methyl alcohol | Not listed | Pimephales promelas: LC50 > 10000 mg/L 96h | EC50 = 39000 mg/L 25 min EC50 = 40000 mg/L 15 min EC50 = 43000 mg/L 5 min | EC50 > 10000 mg/L 24h |

Persistence and Degradability No information available

Bioaccumulation/ Accumulation No information available.

Mobility

| Component | log Pow |
|-------------------|---------|
| Isopropyl alcohol | 0.05 |
| Ethyl alcohol | -0.32 |
| Methyl alcohol | -0.74 |

13. Disposal considerations

Waste Disposal 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.

| Component | RCRA - U Series Wastes | RCRA - P Series Wastes |
|--------------------------|------------------------|------------------------|
| Methyl alcohol - 67-56-1 | U154 | - |

14. Transport information

DOT

UN-No UN1170
 Proper Shipping Name ETHANOL SOLUTION
 Hazard Class 3
 Packing Group II

TDG

UN-No UN1170
 Proper Shipping Name ETHANOL SOLUTION
 Hazard Class 3
 Packing Group II

IATA

UN-No UN1170
 Proper Shipping Name ETHANOL SOLUTION
 Hazard Class 3
 Packing Group II

IMDG/IMO

UN-No UN1170
 Proper Shipping Name ETHANOL SOLUTION
 Hazard Class 3
 Packing Group II

15. Regulatory information

All of the components in the product are on the following Inventory lists: Australia X = listed China Canada The product is classified and labeled according to EC directives or corresponding national laws The product is classified and labeled in accordance with Directive 1999/45/EC Europe TSCA Korea Philippines

International Inventories

| Component | TSCA | DSL | NDSL | EINECS | ELINCS | NLP | PICCS | ENCS | AICS | IECSC | KECL |
|-------------------|------|-----|------|-----------|--------|-----|-------|------|------|-------|------|
| Hematoxylin | X | X | - | 208-237-3 | - | | X | X | X | X | X |
| Isopropyl alcohol | X | X | - | 200-661-7 | - | | X | X | X | X | X |
| Ethyl alcohol | X | X | - | 200-578-6 | - | | X | X | X | X | X |
| Methyl alcohol | X | X | - | 200-659-6 | - | | X | X | X | X | X |
| Water | X | X | - | 231-791-2 | - | | X | - | X | X | X |

Legend:

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313

| Component | CAS-No | Weight % | SARA 313 - Threshold Values % |
|-------------------|---------|----------|-------------------------------|
| Isopropyl alcohol | 67-63-0 | 3-5 | 1.0 |

| | | | |
|----------------|---------|-----|-----|
| Methyl alcohol | 67-56-1 | 3-5 | 1.0 |
|----------------|---------|-----|-----|

SARA 311/312 Hazardous Categorization

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

Clean Water Act Not applicable

Clean Air Act

| Component | HAPS Data | Class 1 Ozone Depletors | Class 2 Ozone Depletors |
|----------------|-----------|-------------------------|-------------------------|
| Methyl alcohol | X | | - |

OSHA Occupational Safety and Health Administration
Not applicable

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

| Component | Hazardous Substances RQs | CERCLA EHS RQs |
|----------------|--------------------------|----------------|
| Methyl alcohol | 5000 lb | - |

California Proposition 65 This product contains the following Proposition 65 chemicals: Ethyl alcohol is only a considered a Proposition 65 developmental hazard when it is ingested as an alcoholic beverage

| Component | CAS-No | California Prop. 65 | Prop 65 NSRL | Category |
|----------------|---------|---------------------|--------------|--------------------------|
| Ethyl alcohol | 64-17-5 | Developmental | - | Developmental Carcinogen |
| Methyl alcohol | 67-56-1 | Developmental | - | Developmental |

State Right-to-Know

| Component | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|-------------------|---------------|------------|--------------|----------|--------------|
| Isopropyl alcohol | X | X | X | - | X |
| Ethyl alcohol | X | X | X | X | X |
| Methyl alcohol | X | X | X | X | X |

U.S. Department of Transportation

| | |
|-----------------------------|---|
| Reportable Quantity (RQ): | Y |
| DOT Marine Pollutant | N |
| DOT Severe Marine Pollutant | N |

U.S. Department of Homeland Security

This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Canada

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

WHMIS Hazard Class B2 Flammable liquid
D1B Toxic materials
D2A Very toxic materials



16. Other information

| | |
|-------------------------|--|
| Prepared By | Regulatory Affairs Richard Allan Scientific A Subsidiary of Thermo Fisher Scientific Tel: (800) 522-7270 |
| Creation Date | 05-Nov-2014 |
| Revision Date | 05-Nov-2014 |
| Print Date | 05-Nov-2014 |
| Revision Summary | This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS) |

Disclaimer

The information provided on 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.

End of SDS

SAFETY DATA SHEET

Creation Date 05-Nov-2014

Revision Date 05-Nov-2014

Revision Number 1

1. Identification

Product Name Weigert`s Iron Hematoxylin, Part B

Cat No. : 88029

Synonyms No information available

Recommended Use Laboratory chemicals.

Uses advised against No Information available

Details of the supplier of the safety data sheet

Company

Richard Allan Scientific
A Subsidiary of Thermo Fisher Scientific
4481 Campus Drive
Kalamazoo, MI 49008
Tel: (800) 522-7270

Emergency Telephone Number

Chemtrec US: (800) 424-9300
Chemtrec EU: 001 (202) 483-7616

2. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

| | |
|--|------------|
| Corrosive to metals | Category 1 |
| Serious Eye Damage/Eye Irritation | Category 2 |
| Skin Sensitization | Category 1 |
| Specific target organ toxicity (single exposure) | Category 3 |
| Target Organs - Respiratory system. | |

Label Elements

Signal Word

Warning

Hazard Statements

May be corrosive to metals
May cause an allergic skin reaction
Causes serious eye irritation
May cause respiratory irritation



Precautionary Statements

Prevention

Wash face, hands and any exposed skin thoroughly after handling
 Avoid breathing dust/fume/gas/mist/vapors/spray
 Contaminated work clothing should not be allowed out of the workplace
 Use only outdoors or in a well-ventilated area
 Keep only in original container
 Wear protective gloves/protective clothing/eye protection/face protection

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
 Call a POISON CENTER or doctor/physician if you feel unwell

Skin

IF ON SKIN: Wash with plenty of soap and water
 If skin irritation or rash occurs: Get medical advice/attention
 Wash contaminated clothing before reuse

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 If eye irritation persists: Get medical advice/attention

Spills

Absorb spillage to prevent material damage

Storage

Store in a well-ventilated place. Keep container tightly closed
 Store locked up
 Store in corrosive resistant polypropylene container with a resistant inliner
 Store in a dry place

Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

None identified

3. Composition / information on ingredients

| Component | CAS-No | Weight % |
|--------------------|-----------|----------|
| Iron(III) chloride | 7705-08-0 | 1 - 2 |
| Hydrochloric acid | 7647-01-0 | <1 |
| Water | 7732-18-5 | 97 - 99 |

4. First-aid measures

General Advice

If symptoms persist, call a physician. Show this safety data sheet to the doctor in attendance.

Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention. Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. If symptoms persist, call a physician.

Skin Contact

Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention. Call a physician immediately. SPEEDY ACTION IS CRITICAL, GET MEDICAL AID IMMEDIATELY. If symptoms persist, call a physician. If skin irritation persists, call a physician. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Inhalation

Move to fresh air. If breathing is difficult, give oxygen. Obtain medical attention. Artificial respiration and/or oxygen may be necessary. Consult a physician. Immediate medical attention is not required. Move to fresh air in case of accidental inhalation of vapors. If symptoms persist, call a physician.

| | |
|--|---|
| Ingestion | Do not induce vomiting. Obtain medical attention. Clean mouth with water and drink afterwards plenty of water. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Consult a physician. |
| Most important symptoms/effects | May cause allergic skin reaction. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing |
| Notes to Physician | Treat symptomatically |

5. Fire-fighting measures

| | |
|---|---|
| Suitable Extinguishing Media | Substance is nonflammable; use agent most appropriate to extinguish surrounding fire. |
| Unsuitable Extinguishing Media | No information available |
| Flash Point | Not applicable |
| Method - | No information available |
| Autoignition Temperature | No information available |
| Explosion Limits | |
| Upper | No data available |
| Lower | No data available |
| Sensitivity to Mechanical Impact | No information available |
| Sensitivity to Static Discharge | No information available |

Specific Hazards Arising from the Chemical

Thermal decomposition can lead to release of irritating gases and vapors.

Hazardous Combustion Products

Carbon monoxide (CO) Carbon dioxide (CO₂) Chlorine Hydrogen chloride gas

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.

NFPA

| | | | |
|--------------------|--------------------------|-------------------------|--------------------------------|
| Health 3 | Flammability 0 | Instability 0 | Physical hazards N/A |
|--------------------|--------------------------|-------------------------|--------------------------------|

6. Accidental release measures

| | |
|---|--|
| Personal Precautions | Use personal protective equipment. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. |
| Environmental Precautions | Should not be released into the environment. See Section 12 for additional ecological information. Do not flush into surface water or sanitary sewer system. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. |
| Methods for Containment and Clean Up | Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. |

7. Handling and storage

| | |
|-----------------|---|
| Handling | Wear personal protective equipment. Ensure adequate ventilation. Do not breathe vapors or spray mist. Do not get in eyes, on skin, or on clothing. Do not ingest. Pay attention to flashback. No information available. Do not take internally. |
| Storage | Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area. Keep containers tightly closed in a cool, well-ventilated place. Keep in properly labeled containers. |

8. Exposure controls / personal protection

Exposure Guidelines

| Component | ACGIH TLV | OSHA PEL | NIOSH IDLH |
|--------------------|--------------------------|--|--|
| Iron(III) chloride | TWA: 1 mg/m ³ | (Vacated) TWA: 1 mg/m ³ | TWA: 1 mg/m ³ |
| Hydrochloric acid | Ceiling: 2 ppm | Ceiling: 5 ppm Ceiling: 7 mg/m ³ (Vacated) Ceiling: 5 ppm (Vacated) Ceiling: 7 mg/m ³ | IDLH: 50 ppm Ceiling: 5 ppm Ceiling: 7 mg/m ³ |

| Component | Quebec | Mexico OEL (TWA) | Ontario TWAEV |
|--------------------|--|---|--------------------------|
| Iron(III) chloride | TWA: 1.0 mg/m ³ | TWA: 1 mg/m ³ STEL: 2 mg/m ³ | TWA: 1 mg/m ³ |
| Hydrochloric acid | Ceiling: 5 ppm Ceiling: 7.5 mg/m ³ | Ceiling: 5 ppm Ceiling: 7 mg/m ³ | CEV: 2 ppm |

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

Engineering Measures

Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment**Eye/face Protection**

Tightly fitting safety goggles. Face-shield.

Skin and body protection

Long sleeved clothing. Apron. Impervious gloves.

Respiratory Protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures

When using, do not eat, drink or smoke. Provide regular cleaning of equipment, work area and clothing.

9. Physical and chemical properties

| | |
|---|--------------------------|
| Physical State | Liquid |
| Appearance | Yellow |
| Odor | mild |
| Odor Threshold | No information available |
| pH | No information available |
| Melting Point/Range | No data available |
| Boiling Point/Range | No information available |
| Flash Point | Not applicable |
| Evaporation Rate | No information available |
| Flammability (solid,gas) | No information available |
| Flammability or explosive limits | |
| Upper | No data available |
| Lower | No data available |
| Vapor Pressure | No information available |
| Vapor Density | No information available |
| Relative Density | 1.005 |
| Solubility | Soluble in water |
| Partition coefficient; n-octanol/water | No data available |
| Autoignition Temperature | No information available |
| Decomposition Temperature | No information available |
| Viscosity | No information available |

10. Stability and reactivity

Reactive Hazard None known, based on information available

Stability Stable under normal conditions.

| | |
|---|--|
| Conditions to Avoid | Incompatible products. Excess heat. |
| Incompatible Materials | Strong oxidizing agents, Reducing agents, Bases, Metals |
| Hazardous Decomposition Products | Carbon monoxide (CO), Carbon dioxide (CO ₂), Chlorine, Hydrogen chloride gas |
| Hazardous Polymerization | Hazardous polymerization does not occur. |
| Hazardous Reactions | None under normal processing. |

11. Toxicological information

Acute Toxicity

Product Information No acute toxicity information is available for this product

Component Information

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|--------------------|-------------------------|-----------------------|-----------------------|
| Iron(III) chloride | 450 mg/kg (Rat) | Not listed | Not listed |
| Hydrochloric acid | 238 - 277 mg/kg (Rat) | 5010 mg/kg (Rabbit) | 1.68 mg/L (Rat) 1 h |

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation Irritating to eyes, respiratory system and skin

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Component | CAS-No | IARC | NTP | ACGIH | OSHA | Mexico |
|--------------------|-----------|------------|------------|------------|------------|------------|
| Iron(III) chloride | 7705-08-0 | Not listed | Not listed | Not listed | Not listed | Not listed |
| Hydrochloric acid | 7647-01-0 | Group 3 | Not listed | Not listed | Not listed | Not listed |
| Water | 7732-18-5 | Not listed | Not listed | Not listed | Not listed | Not listed |

IARC: (International Agency for Research on Cancer)

IARC: (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans

Group 2A - Probably Carcinogenic to Humans

Group 2B - Possibly Carcinogenic to Humans

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure Respiratory system

STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects, both acute and delayed Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information.

12. Ecological information

Ecotoxicity

Do not empty into drains.

| Component | Freshwater Algae | Freshwater Fish | Microtox | Water Flea |
|--------------------|------------------|--|------------|---|
| Iron(III) chloride | Not listed | 20.95 - 22.56 mg/L LC50 96 h 20.26 mg/L LC50 96 h | Not listed | 9.6 mg/L EC50 = 48 h 27.9 mg/L EC50 = 48 h |
| Hydrochloric acid | - | 282 mg/L LC50 96 h | - | - |

Persistence and Degradability No information available

Bioaccumulation/ Accumulation No information available.

Mobility .

| Component | log Pow |
|--------------------|---------|
| Iron(III) chloride | -4 |

13. Disposal considerations

Waste Disposal 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.

14. Transport information

DOT

UN-No UN1760
Proper Shipping Name Corrosive liquid, n.o.s.
Proper technical name (Hydrochloric acid, Ferric chloride)
Hazard Class 8
Packing Group III

TDG

UN-No UN1760
Proper Shipping Name CORROSIVE LIQUID, N.O.S.
Hazard Class 8
Packing Group III

IATA

UN-No UN1760
Proper Shipping Name CORROSIVE LIQUID, N.O.S.
Hazard Class 8
Packing Group III

IMDG/IMO

UN-No UN1760
Proper Shipping Name CORROSIVE LIQUID, N.O.S.
Hazard Class 8
Packing Group III

15. Regulatory information

All of the components in the product are on the following Inventory lists: Australia X = listed China Canada The product is classified and labeled according to EC directives or corresponding national laws The product is classified and labeled in accordance with Directive 1999/45/EC Europe TSCA Korea Philippines

International Inventories

| Component | TSCA | DSL | NDSL | EINECS | ELINCS | NLP | PICCS | ENCS | AICS | IECSC | KECL |
|--------------------|------|-----|------|-----------|--------|-----|-------|------|------|-------|------|
| Iron(III) chloride | X | X | - | 231-729-4 | - | | X | X | X | X | X |
| Hydrochloric acid | X | X | - | 231-595-7 | - | | X | X | X | X | X |
| Water | X | X | - | 231-791-2 | - | | X | - | X | X | X |

Legend:

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313

| Component | CAS-No | Weight % | SARA 313 - Threshold Values % |
|-------------------|-----------|----------|-------------------------------|
| Hydrochloric acid | 7647-01-0 | <1 | 1.0 |

SARA 311/312 Hazardous Categorization

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

Clean Water Act

| Component | CWA - Hazardous Substances | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants |
|--------------------|----------------------------|-----------------------------|------------------------|---------------------------|
| Iron(III) chloride | X | 1000 lb | - | - |
| Hydrochloric acid | X | 5000 lb | - | - |

Clean Air Act

| Component | HAPS Data | Class 1 Ozone Depletors | Class 2 Ozone Depletors |
|-------------------|-----------|-------------------------|-------------------------|
| Hydrochloric acid | X | | - |

OSHA Occupational Safety and Health Administration

OSHA - United States Occupational Safety and Health Administration

| Component | Specifically Regulated Chemicals | Highly Hazardous Chemicals |
|-------------------|----------------------------------|----------------------------|
| Hydrochloric acid | - | TQ: 5000 lb |

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

| Component | Hazardous Substances RQs | CERCLA EHS RQs |
|--------------------|--------------------------|----------------|
| Iron(III) chloride | 1000 lb | - |
| Hydrochloric acid | 5000 lb | 5000 lb |

California Proposition 65 This product does not contain any Proposition 65 chemicals

State Right-to-Know

| Component | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|--------------------|---------------|------------|--------------|----------|--------------|
| Iron(III) chloride | X | X | X | - | X |
| Hydrochloric acid | X | X | X | X | X |

U.S. Department of Transportation

Reportable Quantity (RQ): Y
DOT Marine Pollutant N

DOT Severe Marine Pollutant N

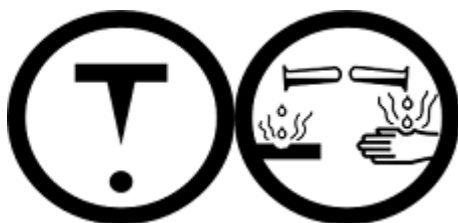
U.S. Department of Homeland Security

This product contains the following DHS chemicals:

| Component | DHS Chemical Facility Anti-Terrorism Standard |
|-------------------|---|
| Hydrochloric acid | 0 lb STQ (anhydrous); 11250 lb STQ (37% concentration or greater) |

Other International Regulations**Mexico - Grade** No information available**Canada**

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

WHMIS Hazard Class E Corrosive material
D2B Toxic materials**16. Other information****Prepared By** Regulatory Affairs
Richard Allan Scientific
A Subsidiary of Thermo Fisher Scientific
Tel: (800) 522-7270**Creation Date** 05-Nov-2014**Revision Date** 05-Nov-2014**Print Date** 05-Nov-2014**Revision Summary** This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS)**Disclaimer**

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End of SDS