Product Name: Hematoxylin Extra

Date: June 1, 2015

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SECTION 1: IDENTIFICATION

Product: Hematoxylin Extra **Product number:** 822

Synonyms: Nuclear stain solution

Recommended use: Laboratory chemical

Company

| Anatech Ltd | 24 hour Transportation Emergency | 800.424.9300 CHEMTREC |
|-----------------------------|----------------------------------|----------------------------------|
| 1020 Harts Lake Road | Product Technical Information | 800.262.8324, M-F, 8 AM-5 PM, ET |
| Battle Creek, MI 49037, USA | Supplier General Contact | 800.262.8324, M-F, 8 AM-5 PM, ET |

SECTION 2: HAZARD(S) IDENTIFICATION

Classification of substance

Acute toxicity, oral (Category 4)
Specific target organ toxicity, repeated exposure (STOT-RE) (Category 2) (Kidneys)

Signal word

Warning

Hazard statement

Harmful if swallowed.

May cause damage to kidneys through prolonged or repeated exposure (oral routes).

Pictogram





Precautionary statements

Prevention

Wash skin thoroughly after handling. Do not eat, drink or smoke when using this product. Do not breath mist/vapors/spray.

Response

If swallowed or feel unwell: Call poison center or get medical advice/attention. Rinse mouth.

Disposal

Dispose of contents/containers in accordance with governmental regulations.

Hazards not otherwise classified

Causes eye irritation.

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SECTION 3: COMPOSITION AND INFORMATION ON INGREDIENTS

| Chemical name | CAS# | Concentration | |
|------------------|------------|---------------|--|
| Acetic acid | 64-19-7 | <1% | |
| Aluminum sulfate | 10043-01-3 | <10% | |
| Ethylene glycol | 107-21-1 | 18-28% | |
| Hematoxylin | 517-28-2 | <1% | |
| Sodium iodate | 7681-55-2 | <1% | |

^{*}As per paragraph (i) of 29 CFR 1910.1200, formulation is considered a trade secret and specific chemical identity and exact percentage (concentration) have been withheld. Specific chemical identity and exact percentage composition will be provided to health professionals in accordance with applicable provisions of paragraph (i).

SECTION 4: FIRST-AID MEASURES

Description of first-aid measures

| Inhalation | Remove victim to fresh air if coughing or difficulty in breathing is experienced. Consult a physician if symptoms persist or worsen. Administer oxygen or artificial respiration as needed. |
|------------|--|
| Eye | Flush eyes for at least 15 minutes in an eyewash station. Consult a physician. |
| Skin | Remove contaminated clothing, including footwear; wash before reuse or discard. For minor exposure, wash affected area with water and mild soap, rinsing thoroughly. In cases of prolonged, repeated or extensive exposure, rinse affected area or entire body for at least 15 minutes. Consult a physician. |
| Ingestion | Call a poison center immediately. |

Important symptoms, acute and delayed

No information available.

Recommendations for immediate medical care and special treatment

See listed first-aid procedures. No information available for special treatment. Treat according to symptoms.

SECTION 5: FIRE-FIGHTING MEASURES

Suitable and unsuitable extinguishing media

Use water spray, alcohol resistant foam, dry chemical or carbon dioxide.

Specific hazards arising from the product

Hazardous products of combustion: carbon monoxide and carbon dioxide.

Special protective equipment/precautions for fire-fighters

Fire-fighters may wear self-contained breathing apparatus if necessary.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions

Ensure adequate ventilation. Avoid inhalation of vapors. Avoid contact with skin and eyes.

Protective equipment

Wear protective gloves, impermeable aprons and splash-proof goggles.

Emergency procedures

See information in sub-section above.

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Methods and materials for containment and cleanup

Contain and soak up spill with inert absorbent material. Small spills can be cleaned with a damp sponge. Discard absorbents and other contaminated solids in a suitable trash receptacle.

Wash contaminated area with soap and water.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with skin and eyes.

Avoid inhalation of vapors.

Wear protective gloves, impermeable aprons and splash-proof goggles.

Conditions for safe storage including incompatibilities

Keep containers tightly closed. Store at room temperature.

SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure limits

| Chemical name | CAS# | Exposure Limit | Value |
|------------------|------------|------------------|------------------------------------|
| Acetic acid | 64-19-7 | OSHA (8 hr TWA) | 10 ppm |
| Aluminum sulfate | 10043-01-3 | | Not established for solutions |
| Ethylene glycol | 107-21-1 | ACGIH Ceiling | 100 mg/m ³ Aerosol only |
| Hematoxylin | 517-28-2 | None established | · |
| Sodium iodate | 7681-55-2 | None established | |

Appropriate engineering controls

Good general room ventilation should be provided so that exposure limits are not exceeded. If required provide local exhaust ventilation to control vapors.

Personal protective measures

| Respiratory protection | None needed for this concentration. When risk assessment shows one is necessary, wear respirator with organic vapor cartridge. |
|------------------------|---|
| Eye protection | Use splash-proof goggles. Wear face shield if splashing hazard exists. An eyewash station must be nearby, no more than 10 seconds away. |
| Skin protection | Wear nitrile or chemical resistant gloves. Do not use latex surgical gloves for protection. Safety shower must be nearby, no more than 10 seconds away. |

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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

| Property | Value |
|--|--------------------------|
| Appearance | Dark purple, liquid |
| Odor | None |
| Odor threshold | No data available |
| pH | 2.1-2.7 |
| Melting point/freezing point | No information available |
| Initial boiling point and boiling range | No information available |
| Flash point | No information available |
| Evaporation rate | No information available |
| Flammability (solid, gas) | No information available |
| Upper/lower flammability or explosive limits | No information available |
| Vapor pressure | No information available |
| Vapor density | No information available |
| Relative density | No information available |
| Solubility(ies) | Complete in water |
| Partition coefficient: n-octanol/water | No information available |
| Auto-ignition temperature | No information available |
| Decomposition | No information available |
| Viscosity | No information available |

SECTION 10: STABILITY AND REACTIVITY

Reactivity

No hazardous reactions if stored and handled as indicated.

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reaction

The product is chemically stable.

Conditions to avoid

None under normal use conditions.

Incompatible materials

Strong oxidants, acids and alkalis.

Hazardous decomposition products

No hazardous decomposition products if stored and handled as indicated.

SECTION 11: TOXICOLOGICAL INFORMATION

Likely routes of exposure

Skin, eye, inhalation.

Symptoms related to physical, chemical and toxicological characteristics

None under normal use conditions.

Eye contact causes irritation.

Delayed and immediate effects

See information in sub-section above.

Chronic effects from short- and long-term exposure

No information available for this product.

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Numerical measures of toxicity

No data to classify the product. The following information is for 100% ethylene glycol.

| Acute toxicity, dermal (rabbit) | LD ₅₀ >10,626 mg/kg |
|---------------------------------|--------------------------------|
| Acute toxicity, oral (rat) | LD ₅₀ >4,700 mg/kg |

Assessment of other acute effects

No data to classify the product. The following information is for 100% ethylene glycol.

Specific target organ toxicity, repeated exposure (STOT-RE): may cause damage to organs through prolonged or repeated exposure. Route: Oral. Affected organs: Kidneys.

Rabbit: mild eye irritation, 24 hours

Carcinogenicity

None as defined by 29 CFR 1900.1200.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity

No environmental information is known for product.

The following data are from studies using 100% ethylene glycol.

LC=lethal concentration; EC=effective concentration

| Test | Duration | Organism | Test Results |
|--------------------------------|----------|----------------------|---------------------------------|
| Toxicity-fish | 96 hours | Rainbow trout | LC ₅₀ =18,500 mg/l |
| Toxicity-aquatic invertebrates | 48 hours | Daphnia (water flea) | $LC_{50} = 41,000 \text{ mg/l}$ |

Persistence and degradability

No information available.

Bioaccumulative potential

Bioconcentration factor for 100% ethylene glycol: 0.60, 61 days.

Mobility in soil

Full strength glyoxal will not evaporate into the atmosphere from the water surface. Adsorption to solid soil phase is not expected.

Other adverse effects

No information available.

SECTION 13: DISPOSAL CONSIDERATIONS

Drain disposal may be possible with the permission of local wastewater treatment authorities. Otherwise contact a licensed professional waste disposal service to dispose of this material. Proper waste disposal is the generator's responsibility. Follow federal, state (provincial) and local regulations.

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SECTION 14: TRANSPORT INFORMATION

DOT (USA)

Not regulated as a dangerous good.

IATA

Not regulated as a dangerous good.

Marine pollutant

No information available.

SECTION 15: REGULATORY INFORMATION

OSHA Hazard Communication Standard

This product is considered hazardous in accordance with 29 CFR 1910.1200.

SECTION 16: OTHER INFORMATION

NFPA (National Fire Protection Association) Rating

General note: The ratings provide information to emergency personnel on the fire hazards associated with the chemical. It is not descriptive of hazards under normal conditions of occupational use.

| Health 0 Materials that, under emergency conditions, would offer no hazard beyond that ordinary combustible materials. | | Materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials. |
|--|--|--|
| Flammability 1 Materials that must be moderately preheated before ignition can occur. | | Materials that must be moderately preheated before ignition can occur. |
| Instability 0 Mate | | Materials that in themselves are normally stable, even under fire conditions. |

Disclaimer

Anatech Ltd. believes the information in the SDS was obtained from reliable sources. However, the information is provided without any warranty, expressed or implied, regarding its correctness. Some information presented and conclusions drawn may be from sources other than direct test data on the substance itself. It is the user's responsibility to determine suitability of the product for his/her own use, and to assure proper use and disposal of it to protect the safety and health of employees and the protection of the environment.

Date of preparation

June 1, 2015