



Centre Anti-Poison pour le Québec: (800) 463-5060

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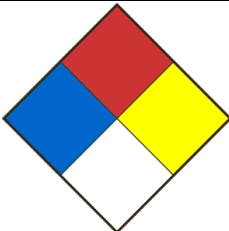
Fax. (Qc): (418) 660-8998

## SAFETY DATA SHEET

### SECTION 01 - PRODUCT AND COMPANY IDENTIFICATION

|   |   |   |              |
|---|---|---|--------------|
| Product Identifier<br>BINDING SOLUTION            |   | Product Use<br>Laboratory use               |              |
| Chemical formula<br>-                             |   | Product code<br>BS-1575                     | Molar weight |
| Chemical name / Commercial name / Synonymous<br>- |   |   |              |
| Supplier's name<br>Laboratoire MAT                |   | Address-Street<br>610, Adanac Street        |              |
| City<br>Québec                                    |   | Province<br>Québec                          |              |
| Postal code<br>G1C 7B7                            | Internet<br>www.labmat.com                                      | Phone number<br>418-660-8666 / 800-890-8666 |              |
| Emergency phone                                   | CANUTEC: 613-996-6666 CENTRE ANTI-POISON DU QUÉBEC 800-463-5060 |   |              |
| Date SDS<br>2/7/2019                              | SDS Prepared by<br>Laboratoire MAT                              | E-Mail<br>labmat@labmat.com                 |              |

## SECTION 02 - HAZARDS IDENTIFICATION

|   |   |  |
|---|---|--|
| <b>Classification WHIMS / GHS</b>   | Serious eye damage/eye irritation - Serious eye damage category 1<br>Skin corrosion/irritation - Skin corrosion category 1  |  |
| <b>Signal Word</b>  | DANGER  |  |
| <b>Hazards statements (H)</b>   | H314 Causes severe skin burns and eye damage.<br>H318 Causes serious eye damage.  |  |
| <b>Precautionary statements (P)</b>   | P260 Do not breathe dust / fume / gas / mist / vapours / spray.<br>P264 Wash the areas of the body that have been in contact with the product after handling.<br>P280 Wear protective gloves/protective clothing/eye protection/face protection.<br>P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.<br>P303 + P361 + P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.<br>P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.<br>P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.<br>P310 Immediately call a POISON CENTER or doctor/physician.<br>P321 Specific treatment (see section 4 of the SDS and on this label).<br>P363 Wash contaminated clothing before reuse.<br>P405 Store locked up.<br>P501 Dispose of contents/container in accordance with local / regional / national / international regulations or contact a specialist waste disposal company. |  |
| <b>PICTOGRAMS</b>   |   |  |
| <b>Other dangers</b>  | NFPA (Risk: 0=No risk; 1=Slight; 2=Moderate; 3=Signifiant; 4=Extreme)   |  |
|  | <b>Health</b> 1<br><b>Fire</b> 0<br><b>Reactivity</b> 0<br><b>Special danger</b>  |  |

## SECTION 03 - COMPOSITION/INFORMATION ON INGREDIENTS

| Ingrédients (Dénomination chimique / synonymes) | Numéro CAS et tout identificateur unique | Concentration (%) |
|---|--|-------------------|
| Acide citrique                                  | 77-92-9                                  | 26                |
| MES.H2O   | 145224-94-8                              | 9                 |
| Tris base                                       | 77-86-1                                  | 1                 |
| Tris HCl  | 1185-53-1                                | 3                 |
| Chlorhydrate de guanidine                       | 50-01-1                                  | 6                 |
| Triton X-100                                    | 9002-93-1                                | 4                 |
| Eau   | 7732-18-5                                | 51                |

## SECTION 04 - FIRST AID MEASURES

|  |  |
|--|--|
| <b>Eye contact</b>   | Wash eyes with large amounts of water for at least 15 minutes while holding eyelids apart to rinse eyes. If irritation persists, seek medical attention. |
| <b>Skin contact</b>  | Wash skin with plenty of water for at least 15 minutes. Remove soiled clothing. If irritation persists, seek medical attention.                          |
| <b>Inhalation</b>  | Move the unwell person to the fresh air. If breathing is difficult, give oxygen. Consult a physician.  |
| <b>Ingestion</b>   | If the person is conscious, give water to drink. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Consult a physician.     |
| <b>Most important symptoms and effects (acute and delayed)</b>         | Ref. section 11.   |
| <b>Immediate medical attention and special treatment, if necessary</b> | In case of medical consultation, keep this sheet available.  |
| <b>General advice</b>  | Show this safety data sheet to the doctor in attendance.   |

## SECTION 05 - FIREFIGHTING MEASURES

|  |   |
|--|---|
| <b>Flammability</b>  | No  |
| <b>Ignition conditions</b>   | Non flammable.  |
| <b>Suitable extinguishing media</b>                                  | Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.  |
| <b>Unsuitable extinguishing media</b>                                | Not applicable.   |
| <b>Hazardous combustion / decomposition products</b>                 | Hazardous decomposition products formed under fire conditions. Carbon oxides. - nitrogen oxides (NOx). - Sulphur oxides Hydrogen chloride gas. To our knowledge, the products of combustion and decomposition have not been fully studied.  |
| <b>Special fire and explosion hazards</b>                            | When concentrated, the product reacts according to the following characteristics: Anhydrous citric acid may react violently or even explode on contact with nitric or perchloric acids, strong bases and metal nitrates. The risks are increased when these mixtures are heated. May react violently with incompatible products (Ref Section 10). To our knowledge, the product has not been fully evaluated. |
| <b>Special protective equipment and precautions for firefighters</b> | Discard incompatible substances if this can be done without risk. Firefighters should be equipped with standard protective equipment, fireproof clothing, face mask, gloves, protective boots and, where appropriate, self-contained breathing apparatus.   |

## SECTION 06 - ACCIDENTAL RELEASE MEASURES

|  |   |
|--|---|
| <b>Methods and materials for containment and cleaning up / Personnel precautions, protective equipment</b> | Evacuate personnel to safe areas. Absorb the product with sand or vermiculite. Dilute residues with water, clean and rinse. Ensure a good ventilation of the premises. Dispose of residues in a container for disposal of hazardous materials. When handling, wear suitable safety equipment. Use breathing apparatus if necessary. Dispose of residues in a container provided for the disposal of hazardous materials. When handling, wear appropriate safety equipment. Do not let product enter drains. |
|--|---|

## SECTION 07 - HANDLING AND STORAGE

|                                    |   |
|------------------------------------|---|
| <b>Conditions for safe storage</b> | Store in a cool, dry place. Keep container tightly closed and store away from heat, moisture, and incompatible products. Protect from the sun's rays. Keep container tightly closed in a dry and well-ventilated place. |
| <b>Methods of handling</b>         | Always open containers slowly to allow any excess pressure to vent. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust or vapor is formed.                              |

## SECTION 08 - EXPOSURE CONTROLS/PERSONAL PROTECTION

### Workplace control parameters

| Components  | CAS-No. | Value             | Control<br>Citric acid | Basis   |
|-------------|---------|-------------------|------------------------|---|
| Citric acid | 77-92-9 | No data available | TLV, TWA, STEL         | Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)   |
|             |         | No data available | TLV, TWA, STEL         | Canada. British Columbia OEL  |
|             |         | No data available | TLV, TWA, STEL         | Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants |

| Components              | CAS-No. | Value             | Control<br>Citric acid | Basis   |
|-------------------------|---------|-------------------|------------------------|---|
| GUANIDINE HYDROCHLORIDE | 50-01-1 | No data available | TLV, TWA, STEL         | Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)   |
|                         |         | No data available | TLV, TWA, STEL         | Canada. British Columbia OEL  |
|                         |         | No data available | TLV, TWA, STEL         | Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants |

| Components        | CAS-No.   | Value             | Control<br>parameters | Basis   |
|-------------------|-----------|-------------------|-----------------------|---|
| Chlorhydrate TRIS | 1185-53-1 | No data available | TLV, TWA, STEL        | Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)   |
|                   |           | No data available | TLV, TWA, STEL        | Canada. British Columbia OEL  |
|                   |           | No data available | TLV, TWA, STEL        | Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants |

| Components | CAS-No. | Value | Control | Basis |
|------------|---------|-------|---------|-------|
|------------|---------|-------|---------|-------|

|               |           |                   |                    |   |
|---------------|-----------|-------------------|--------------------|---|
|               |           |                   | <b>Citric acid</b> |   |
| Trixton X-100 | 9002-93-1 | No data available | TLV, TWA, STEL     | Canada.<br>Alberta,<br>Occupational<br>Health and<br>Safety Code<br>(table 2:<br>OEL)   |
|               |           | No data available | TLV, TWA, STEL     | Canada.<br>British<br>Columbia<br>OEL   |
|               |           | No data available | TLV, TWA, STEL     | Québec.<br>Regulation<br>respecting<br>occupational<br>health and<br>safety,<br>Schedule 1,<br>Part 1:<br>Permissible<br>exposure<br>values for<br>airborne<br>contaminants |

| Components                          | CAS-No. | Value             | Control<br>Citric acid | Basis   |
|-------------------------------------|---------|-------------------|------------------------|---|
| TRIS(HYDROXYMETHYL)<br>AMINOMETHANE | 77-86-1 | No data available | TLV, TWA, STEL         | Canada.<br>Alberta,<br>Occupational<br>Health and<br>Safety Code<br>(table 2:<br>OEL)   |
|                                     |         | No data available | TLV, TWA, STEL         | Canada.<br>British<br>Columbia<br>OEL   |
|                                     |         | No data available | TLV, TWA, STEL         | Québec.<br>Regulation<br>respecting<br>occupational<br>health and<br>safety,<br>Schedule 1,<br>Part 1:<br>Permissible<br>exposure<br>values for<br>airborne<br>contaminants |

| Components      | CAS-No.     | Value             | Control<br>Citric acid | Basis  |
|-----------------|-------------|-------------------|------------------------|--|
| MES Monohydrate | 145224-94-8 | No data available | TLV, TWA, STEL         | Canada.<br>Alberta,<br>Occupational<br>Health and<br>Safety Code<br>(table 2:<br>OEL)                  |
|                 |             | No data available | TLV, TWA, STEL         | Canada.<br>British<br>Columbia<br>OEL  |
|                 |             | No data available | TLV, TWA, STEL         | Québec.<br>Regulation<br>respecting<br>occupational<br>health and<br>safety,<br>Schedule 1,<br>Part 1: |

|  |  |  |  |   |
|--|--|--|--|---|
|  |  |  |  | Permissible exposure values for airborne contaminants |
|--|--|--|--|---|

|                            |  |
|----------------------------|--|
| <b>Ventilation</b>         | Use fan.   |
| <b>Respiratory</b>         | If the permissible levels are exceeded, use a mechanical filter / cartridge against NIOSH vapors or a respirator with air supply.  |
| <b>Gloves</b>              | Handle with gloves.  |
| <b>Eyes</b>                | Safety goggles with safety shutters.   |
| <b>Shoes</b>               | Safety shoes.  |
| <b>Clothing</b>            | Labcoat.   |
| <b>Engineering control</b> | Have safety showers and eyewash stations in the workplace in case of an emergency and a ventilation system to maintain the level of concentrations in the air below the exposure limit values. |

## SECTION 09 - PHYSICAL AND CHEMICAL PROPERTIES

|  |  |
|--|--|
| <b>Physical state</b>                        | Liquid.  |
| <b>Appearance</b>                            | Liquide visqueux incolore-   |
| <b>Odour</b>                                 | Donnée non disponible.   |
| <b>Odour threshold</b>                       | Data not available   |
| <b>pH</b>                                    | <2.  |
| <b>Melting point / Freezing point</b>        | Data not available   |
| <b>Initial boiling point</b>                 | Data not available   |
| <b>Boiling range</b>                         | Data not available   |
| <b>Flash point</b>                           | Data not available   |
| <b>Evaporation rate</b>                      | Data not available   |
| <b>Flammability</b>                          | No   |
| <b>Lower flammable / Explosive limit</b>     | Data not available   |
| <b>Upper flammable / Explosive limit</b>     | Data not available   |
| <b>Vapour pressure</b>                       | Data not available   |
| <b>Solubility</b>                            | Miscible avec l'eau en toutes proportions. Miscible partiellement avec l'alcool. |
| <b>Vapour density</b>                        | Data not available   |
| <b>Relative density</b>                      | 1.188g/ml  |
| <b>Partition coefficient water/n-octanol</b> | Data not available   |
| <b>Auto-ignition temperature</b>             | Data not available   |
| <b>Decomposition temperature</b>             | Data not available   |
| <b>Viscosity</b>                             | Data not available   |

## SECTION 10 - STABILITY AND REACTIVITY

|  |  |
|--|--|
| <b>Reactivity</b>  | Non-reactive under normal conditions.  |
| <b>Chemical stability</b>  | Stable under recommended storage conditions.   |
| <b>Possibility of hazardous reactions</b>  | Stable under normal conditions.  |
| <b>Conditions of instability (Including sensitivity to shock / static discharge / vibration)</b> | Avoid excessive heat and humidity.   |
| <b>Incompatible material</b>   | When pure, the products react with the following products: Oxidizing agents, reducing agents and bases, nitrates. Strong reducing agents. Oxidizing agents Strong bases.   |
| <b>Hazardous decomposition products</b>  | Hazardous decomposition products formed under fire conditions. Carbon oxides. - Sulphur oxides. Nitrogen oxides (NOx), Hydrogen chloride. To our knowledge, the products of decomposition have not been fully studied. |

## SECTION 11 - TOXICOLOGICAL INFORMATION

## CITRIC ACID

|  |   |
|--|---|
| <b>Routes of exposure</b>                        | Ingestion, inhalation, skin and eyes.   |
| <b>Acute exposition effects / symptoms:</b>      | By exposure route below.  |
| - Eyes   | Severe irritation that may cause eye damage.  |
| - Skin   | Severe irritation and dermatitis.   |
| - Inhalation                                     | Irritation of the mucous membranes and respiratory tract. Nervous disorders, dizziness, headache, watery eyes, cough, dyspnea, nausea and vomiting.   |
| <b>Acute toxicity (Ingestion)</b>                | Irritation of the mucous membranes. Gastrointestinal disorders, cramps, enteritis, diarrhea, headache, dizziness, convulsions, nausea and vomiting.   |
| <b>Chronic exposure effects / symptoms</b>       | Burning sensation, dermatitis, conjunctivitis, nervous disorders, respiratory allergy, watery eyes, dizziness, cough, dyspnea, laryngitis, loss of appetite, fatigue, convulsions, nausea and vomiting. |
| <b>DL50 (specify species and route of entry)</b> | LD50 Oral - Rat - 5,400 mg/kg. LD50 Dermal - Data not available.  |
| <b>CL50 (specify species and route of entry)</b> | LC50 - Inhalation - Data not available.   |

## TRIS(HYDROXYMETHYLE) AMINOMETHANE

|  |  |
|--|--|
| <b>Routes of exposure</b>                        | Inhalation, skin and eyes.   |
| <b>Acute exposition effects / symptoms:</b>      | By exposure route below.   |
| - Eyes   | Irritation.  |
| - Skin   | Irritation.  |
| - Inhalation                                     | Irritation of the mucous membranes and respiratory tract. Nervous disorders, cough, dyspnea, headache, dizziness, nausea and vomiting. |
| <b>Acute toxicity (Ingestion)</b>                | Gastrointestinal disorders, cramps, diarrhea, headache, dizziness, convulsions, nausea and vomiting.                                   |
| <b>Chronic exposure effects / symptoms</b>       | Burning sensation, nervous disorders, chest pain, cough, dyspnea, headache, dizziness, tiredness, nausea and vomiting.                 |
| <b>DL50 (specify species and route of entry)</b> | LD50 Oral - rat - > 3,000 mg/kg. DL50 Dermal - Rat - > 5,000 mg/kg   |
| <b>CL50 (specify species and route of entry)</b> | Data not available.  |

## TRIS-HCL

|  |   |
|--|---|
| <b>Routes of exposure</b>                        | Ingestion, inhalation, skin contact.  |
| <b>Acute exposition effects / symptoms:</b>      | By exposure route below.  |
| - Eyes   | May cause eye irritation.   |
| - Skin   | May be harmful if absorbed through the skin. Provoke a skin irritation.                                 |
| - Inhalation                                     | May be harmful if inhaled. Causes irritation of the respiratory system.                                 |
| <b>Acute toxicity (Ingestion)</b>                | May be harmful if swallowed.  |
| <b>Chronic exposure effects / symptoms</b>       | To our knowledge, the chemical, physical and toxicological properties have not been fully investigated. |
| <b>DL50 (specify species and route of entry)</b> | LD50 Oral - Data not available; LD50 Dermal - Data not available.                                       |
| <b>CL50 (specify species and route of entry)</b> | LC50 - Inhalation - Data not available.   |

## GUANIDINE HYDROCHLORIDE

|  |   |
|--|---|
| <b>Routes of exposure</b>                        | Ingestion, inhalation, skin and eyes.   |
| <b>Acute exposition effects / symptoms:</b>      | By exposure route below.  |
| - Eyes   | Irritation and may cause inflammation of the conjunctiva.   |
| - Skin   | Irritation and dermatitis.  |
| - Inhalation                                     | Irritation of the mucous membranes and respiratory tract. Nervous disorders, chest pain, cough, dyspnea, headache, dizziness, sweating, salivation, nausea and vomiting.  |
| <b>Acute toxicity (Ingestion)</b>                | Irritation of the mucous membranes. Abdominal pain, cramps, diarrhea, headache, dizziness, sweating, salivation, tremors, convulsions, nausea and vomiting.   |
| <b>Chronic exposure effects / symptoms</b>       | Burning sensation, dermatitis, conjunctivitis, nervous disorders, chest pain, cough, dyspnoea, laryngitis, headache, dizziness, confusion, irritability, sweating, salivation, fatigue, weight loss and loss of appetite, nausea and vomiting . |
| <b>DL50 (specify species and route of entry)</b> | LD50 Oral - Rat - 475 mg/kg. LD50 Dermal - Rabbit - 2000 mg/kg  |
| <b>CL50 (specify species and route of entry)</b> | LC50 Inhalation - Rat - 4h - 3.181 - 7.655 mg/L   |

**TRITON® X-100**

|  |   |
|--|---|
| <b>Routes of exposure</b>                        | Ingestion, inhalation, skin and eyes.   |
| <b>Acute exposition effects / symptoms:</b>      | By exposure route below.  |
| <b>- Eyes</b>                                    | Severe irritation and may result in inflammation of the conjunctiva.  |
| <b>- Skin</b>                                    | Irritation and dermatitis. Prolonged skin contact may cause an allergic reaction characterized mainly by erythematous lesions.  |
| <b>- Inhalation</b>                              | Irritation of the mucous membranes and respiratory tract. Nervous disorders, cough, dyspnea, headache, dizziness, nausea and vomiting.  |
| <b>Acute toxicity (Ingestion)</b>                | Irritation of the mucous membranes. Gastrointestinal disorders, cramps, diarrhea, headache, dizziness, convulsions, nausea and vomiting.  |
| <b>Chronic exposure effects / symptoms</b>       | Burning sensation, dermatitis, conjunctivitis, nervous disorders, skin allergy, cough, dyspnea, headache, dizziness, confusion, irritability, fatigue, erythema, nausea and vomiting. |
| <b>DL50 (specify species and route of entry)</b> | LD50 Oral - Rat - 1800 mg/kg. LD50 Dermal - Rabbit - > 3,000 mg/kg.   |
| <b>CL50 (specify species and route of entry)</b> | LC50 - Inhalation - Data not available.   |

**MES MONOHYDRATE**

|  |   |
|--|---|
| <b>Routes of exposure</b>                        | Ingestion, inhalation, skin and eyes.   |
| <b>Acute exposition effects / symptoms:</b>      | By exposure route below.  |
| <b>- Eyes</b>                                    | May cause eye irritation.   |
| <b>- Skin</b>                                    | May be harmful if absorbed through skin. May cause skin irritation.                                     |
| <b>- Inhalation</b>                              | May be harmful if inhaled. May cause respiratory tract irritation.                                      |
| <b>Acute toxicity (Ingestion)</b>                | May be harmful if swallowed.  |
| <b>Chronic exposure effects / symptoms</b>       | To our knowledge, the chemical, physical and toxicological properties have not been fully investigated. |
| <b>DL50 (specify species and route of entry)</b> | LD50 Oral - Data not available; LD50 Dermal - Data not available.                                       |
| <b>CL50 (specify species and route of entry)</b> | LC50 - Inhalation - Data not available.   |

**SUMMARY**

|   |  |
|---|--|
| <b>Acute exposure effects / Symptoms:</b>   | By exposure routes below.  |
| <b>Ingestion</b>                            | To our knowledge, the product has not been fully evaluated   |
| <b>Inhalation</b>                           | To our knowledge, the product has not been fully evaluated   |
| <b>Skin</b>                                 | To our knowledge, the product has not been fully evaluated   |
| <b>Eyes</b>                                 | To our knowledge, the product has not been fully evaluated   |
| <b>Chronic exposure effects / Symptoms:</b> | To our knowledge, the product has not been fully evaluated   |
| <b>ETA Mix (Estimated Acute Toxicity)</b>   | LD50 Oral: 4529 mg/kg - Rat<br>LD50 Dermal: 5952 mg/kg - Undefined species<br>LC50 Inhalation: 5279 mg/L- 4h - Rat |

**SECTION 12 - ECOLOGICAL INFORMATION**

|   |    |
|---|----|
| <b>Available ecological information</b> | No |
|---|----|

**SECTION 13 - DISPOSAL CONSIDERATIONS**

|                               |  |
|-------------------------------|--|
| <b>Waste Disposal Method</b>  | Dispose of contents / container in accordance with local / regional / national / international regulations / or contact a specialist waste disposal company. |
| <b>Contaminated Packaging</b> | Dispose of as unused product.  |



## SECTION 14 - TRANSPORT INFORMATION

|                            |     |
|----------------------------|-----|
| UN Number                  | N/R |
| UN Proper shipping name    |     |
| Transport hazard class(es) |     |
| Packing group              |     |
| Limited quantity index     |     |
| ERAP Index                 |     |
| Special precautions        |     |

## SECTION 15 - REGULATORY INFORMATION

|              |  |
|--------------|--|
| WHIMS CANADA | Serious eye damage/eye irritation - Serious eye damage category 1<br>Skin corrosion/irritation - Skin corrosion category 1 |
|--------------|--|

## SECTION 16 - OTHER INFORMATION

### Further information

The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. It does not represent any guarantee of the properties of the product. Laboratoire MAT Inc. shall not be held liable for any damage resulting from handling or from contact with the above product.

Last Update: 2/7/2019