

SECTION I: IDENTIFICATION OF PRODUCT

COMPANY: **Diversity Technologies Corp.** DATE: **October 23, 2015**
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PRODUCT NAME: **T-352 Biocide**

PRODUCT USE: Antimicrobial (Biocide)
 CHEMICAL FAMILY: Aqueous mixture of aldehyde. CAS #: 111-30-8

WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS)

WHMIS CLASSIFICATION: Exempt under Pest Control Products Act Registration #28194 (D1B; D2A; D2B; E)
 WORKPLACE HAZARD: Acute toxin (poisonous); toxic (teratogen); toxic (skin sensitizer); corrosive

TRANSPORTATION OF DANGEROUS GOODS (TDG)

PROPER SHIPPING NAME: Not regulated; aqueous gluteraldehyde solution below 30%
 TDG CLASSIFICATION: Not applicable
 UN NUMBER (PIN): Not applicable
 PACKING GROUP: Not applicable

SECTION II: HAZARDOUS INGREDIENTS

| INGREDIENT | % (w/w) | CAS NUMBER | LD ₅₀ Oral-Rat | LC ₅₀ Inhal-Rat | ACGIH-TLV |
|----------------|---------|------------|---------------------------|----------------------------|--------------------|
| Gluteraldehyde | 25 | 111-30-8 | 134 mg/kg | 480 mg/m3 | 0.05 ppm (Ceiling) |
| Methanol | 0.1-1.0 | 67-56-1 | 5600 mg/kg | 64000 ppm/4hr | 250 ppm (Skin) |

SECTION III: HEALTH HAZARDS

ROUTE OF ENTRY: EYE CONTACT SKIN CONTACT INHALATION INGESTION
 EYE CONTACT: Extremely corrosive! Contact with eyes will cause conjunctivitis (redness and swelling of conjunctiva). Severe corneal injury may occur, possible permanent impairment of vision. Vapours will cause stinging sensations. Corrosive effects may be delayed, and damage may occur without the sensation or onset of pain.

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| SKIN CONTACT: | Corrosive! Brief contact causes irritation. Chemical burns can occur if not promptly removed. May cause staining. Prolonged or wide-spread contact may result in the absorption of potentially harmful amounts of material. Corrosive effects may be delayed, and damage may occur without the sensation or onset of pain. May cause skin sensitization or other allergic responses. LD50 (Dermal Rabbit) = 560 mg/kg. |
| INGESTION: | Toxic if ingested. Oral toxicity of glutaraldehyde solutions has been shown to increase upon dilution. Corrosive! Causes severe burning and pain in the mouth, throat and abdomen. Vomiting, diarrhea and perforation of the esophagus and stomach lining may occur. Swallowing causes severe burns to the mouth, throat and stomach, death may result. Severe scarring of the throat may occur. |
| INHALATION: | Corrosive! May cause severe irritation of the nose, throat and respiratory tract. Repeated, or prolonged, exposure may cause productive cough, running nose, bronchopneumonia, pulmonary oedema, and reduction of pulmonary function. Aspiration into the lungs may occur during ingestion or vomiting, resulting in lung injury (chemical pneumonia). Toxic effects may be delayed. |
| CARCINOGENICITY: | Not classified as carcinogenic by ACGIH, IARC, OSHA or NTP. |
| TERATOGENICITY: | Methanol may cause teratogenic/embryotoxic effects based on studies in laboratory animals. |
| REPRODUCTIVE TOXICITY: | No adverse reproductive effects are anticipated. |
| MUTAGENICITY: | No adverse mutagenic effects are anticipated. |
| SYNERGISTIC PRODUCTS: | None known. |

SECTION IV: FIRST AID MEASURES

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| SKIN CONTACT: | Immediately wash affected area with soap and plenty of running water for 15 - 20 minutes. Remove contaminated clothing. If irritation persists, repeat flushing. Obtain immediate medical attention. |
| EYE CONTACT: | Immediately flush with gently flowing warm water for minimum 30 minutes, preferably up to 60 minutes. Remove contact lenses if applicable. Hold eyelids open to ensure thorough flushing. Seek medical attention after flushing time is completed unless flushing is available during transport. |
| INGESTION: | IMMEDIATELY call a poison control center or doctor. Do not induce vomiting unless told to do so by a poison control center or doctor. If the person is fully alert and cooperative, have the person rinse mouth with plenty of water. In cases of ingestion have the person drink 4 to 10 ounces (120-300 mL) of water. Never give anything by mouth if the patient is unconscious, rapidly losing consciousness or convulsing. |
| INHALATION: | Move victim to fresh air. Apply oxygen or artificial respiration as required. Seek immediate medical attention. |

SECTION V: PHYSICAL DATA

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| APPEARANCE AND ODOUR: | Clear colourless liquid; sweet odour | |
| SPECIFIC GRAVITY: | 1.0 - 1.1 | |
| BOILING POINT (°C): | 100 | |
| MELTING POINT (°C): | -6 | |
| SOLUBILITY IN WATER: | Miscible | pH: 3.1 - 4.0 (neat) |
| PERCENT VOLATILE BY VOLUME: | Not available | |
| EVAPORATION RATE: | Not available | |
| VAPOUR PRESSURE (mmHg): | Not available | |
| VAPOUR DENSITY (air = 1): | Not available | |
| BULK DENSITY: | Not applicable | |

SECTION VI: FIRE AND EXPLOSION HAZARD DATA

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| FLASH POINT: | Not applicable |
| FLAMMABLE LIMITS: | Not applicable |
| EXTINGUISHING MEDIA: | Use extinguishing media suitable for surrounding materials. |
| SPECIAL FIRE FIGHTING PROCEDURES: | Self-contained breathing apparatus required for fire-fighting personnel. Remove containers from fire area, or cool with water spray, if possible. |
| UNUSUAL FIRE AND EXPLOSION HAZARDS: | If water is boiled off, the residual material can burn and give off toxic fumes. |
| HAZARDOUS COMBUSTION PRODUCTS: | Oxides of carbon and other irritating gasses. |

SECTION VII: REACTIVITY DATA

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| STABILITY: | <input checked="" type="checkbox"/> STABLE | <input type="checkbox"/> UNSTABLE |
| INCOMPATIBILITY (CONDITIONS TO AVOID): | Avoid strong oxidizers, reducing agents, lewis or mineral acids, strong acids, strong alkalies and amines. Avoid high temperatures, sparks, open flames and all other sources of ignition. | |
| CONDITIONS OF REACTIVITY: | Alkalies and acids can catalyze an aldol-type condensation (endothermic, but not expected to be violent). | |
| HAZARDOUS DECOMPOSITION PRODUCTS: | Not available. | |
| HAZARDOUS POLYMERIZATION: | <input checked="" type="checkbox"/> WILL NOT OCCUR | <input type="checkbox"/> MAY OCCUR |

SECTION VIII: PREVENTIVE MEASURES

SPECIAL PROTECTION INFORMATION

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| RESPIRATORY PROTECTION: | Use an approved full face-piece respirator with acid gas, dust, mist, fume cartridges for up to 0.5 ppm glutaraldehyde. SCBA if concentrations are higher or unknown. |
| VENTILATION: | Local exhaust ventilation, process enclosure or other engineering control when using this product. Ventilation equipment should be corrosion proof. |
| PROTECTIVE GLOVES: | Neoprene or butyl rubber gloves required. |
| EYE PROTECTION: | Chemical goggles and full-face shield must be worn at all times when handling this product. Do not wear contact lenses. |
| OTHER PROTECTIVE EQUIPMENT (SPECIFY): | Impervious rubber apron. Ensure safety shower and eye-wash station are available and functional. |

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Avoid inhalation of vapours/mists. Do not get on skin, in eyes or on clothing. Wear suitable protection for eyes and skin when handling. Use with adequate ventilation. Avoid contact with incompatible materials. Launder contaminated clothing before reuse. Keep container closed when not in use. Store in cool, dry, well-ventilated area. Empty containers contain residual hazardous material, and must be handled and stored as if full.

STEPS TO BE TAKEN IN CASE THE MATERIAL IS SPILLED OR RELEASED

Use appropriate safety equipment including respiratory protection. Stop leak if possible to do so without risk. Dike to prevent spread of material. Collect large spills with vacuum truck. Soak up small spills, and residual from large spills, with absorbent. Collect absorbent in approved containers for disposal. Wash spill area with soap and water. Do not allow material to enter sewers or storm-water inlets.

WASTE DISPOSAL METHOD

Dispose in accordance with federal, provincial and local regulations. It is the responsibility of the end-user to determine if material meets the criteria of hazardous waste at the time of disposal. Empty containers must be recycled, or disposed, of in accordance with local regulations.

SECTION IX: PREPARATION

The information contains herein is given in good faith, but no warranty, expressed or implied, is made.

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