

Product Name: Substrate Reagent Pack

Reviewed on: 24 July 2018

1. Identification of Substance:

- **Other means of identification: Catalog Number:** DY999
Components: Color Reagent A, Color Reagent B (contains Tetramethylbenzidine and N,N-Dimethylformamide or DMF)
- **GHS product identifier:** Substrate Reagent Pack
- **Application of the substance / the preparation:** For Research Use Only
- **Manufacturer/Supplier:**
Bio-Techne - R&D Systems Inc.
614 McKinley Place N.E.
Minneapolis, MN 55413 USA
1-800-343-7475
- **For product related questions call:** 1-800-343-7475. In Europe call: +44(0)1235-529449.
- **Emergency information:** In case of a chemical emergency, spill, leak, fire, or accident call **CHEMTREC** at 1-800-424-9300 (US or Canada). Outside USA and Canada: +1 703-527-3887 (collect calls accepted).

2. Hazard Identification:

- **Classification: Regulation (EC) No. 1272/2008 (CLP/GHS), 29 CFR 1910.1200 (OSHA)**
Color Reagent B: Tetramethylbenzidine in a Proprietary Buffer containing N,N-Dimethylformamide (DMF).



Irritant, Dermal – Category 2 Reproductive
Toxicity – Category 1B Acute Toxicity, Dermal
– Category 4 Acute Toxicity, Inhalation –
Category 4 Eye Irritation – Category 2A

- **Signal Word:** DANGER
- **Hazard statements:** H315 Causes skin irritation. H319 Causes serious eye irritation. H312 Harmful in contact with skin. H332 Harmful if inhaled. H335 May cause respiratory irritation. H360 May damage the unborn child.
- **Precautionary statements:** P201 Obtain special instructions before use. P202 Do not handle until all safety precautions have been read and understood. P261 Avoid breathing fumes. P264 Wash hands thoroughly after handling. P270 Do not eat, drink or smoke when using this product. P271 Use only in a well-ventilated area. P280 Wear protective gloves and protective clothing. P281 Use personal protective equipment as required.
IF SWALLOWED: Call a poison control center or doctor if you feel unwell.
IF ON SKIN: Wash with plenty of soap and water. Call a poison control center. Wash contaminated clothing before reuse.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison control center or doctor/physician if you feel unwell.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do continue rinsing.
IF EXPOSED OR CONCERNED: Get medical advice/attention.
- **Potential Health Effects:**
Inhalation: May be harmful if inhaled. Causes respiratory tract irritation. **Skin:** May be harmful if absorbed through skin. Causes skin irritation. **Eyes:** Causes eye irritation.
Ingestion: May be harmful if swallowed.

Product Name: Substrate Reagent Pack

Reviewed on: 24 July 2018

- **Classification according to Directive 67/548/EEC:** T: Toxic. Repr.Cat.2: Reproductive toxins. Xi: Irritant
- **R-Phrase:** R61 May cause harm to unborn child, R20/21 Harmful by inhalation and in contact with skin, R36/37/38 Irritating to eyes, respiratory system and skin.
- **S-Phrase:** S26 in case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S36/37 Wear suitable protective clothing and gloves. S45 In case of accident or if you feel unwell, seek medical advice immediately. S53 Avoid exposure – obtain special instructions before use.
- **Other hazards:** Rapidly absorbed through skin.

3. Information on Ingredients:

Description: Tetramethylbenzidine in a Proprietary Buffer

| Contains | CAS No. | EC-No. | Index-No. | Content |
|---|------------|-----------|--------------|-----------|
| Proprietary Buffer with N,N-Dimethylformamide (DMF) | 68-12-2 | 200-679-5 | 616-001-00-x | 24% - 25% |
| Tetramethylbenzidine | 54827-17-7 | 259-364-6 | NA | <0.05% |

4. First Aid Measures:

- **Consult a physician** – Show this MSDS to the doctor in attendance.
- **If Inhaled:** Move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
- **In case of skin contact:** Wash off with soap and plenty of water. Consult a physician.
- **In case of eye contact:** Rinse thoroughly with plenty of water for 15 minutes. Consult a physician.
- **If swallowed:** DO NOT INDUCE VOMITING. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.
- **Most important symptoms and effects, both acute and delayed:** To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

5. Fire Fighting Measures:

- **Suitable extinguishing agents:** For small fires, use media such as “alcohol” foam, dry chemical or carbon dioxide. For large fires, apply water from as far as possible. Use large quantities of water applied as a mist or spray. Solid streams of water may be ineffective. Cool affected containers with flooding quantities of water.
- **Hazards from the substance or mixture:** Carbon oxides, Nitrogen oxides(NOx)
Special precautions for fire-fighters: Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Use water spray to cool unopened containers.

6. Accidental Release Measures:

- **Person-related safety precautions:** Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.
- **Measures for environmental protection:** Prevent further leakage or spillage if safe to do so. Do not let enter drains.
- **Measures for containment and cleaning:** Contain spillage, and then collect with non-combustible absorbent material (eg. sand, diatomaceous earth, vermiculite). Place in a container for disposal according to local regulations.

7. Handling and Storage:

- **Precautions for safe handling:** Avoid exposure, obtain special instructions before use. Avoid contact with skin and eyes. Avoid inhalation of vapor and mist. Keep away from origins of ignition. No smoking. Take measures to prevent the buildup of

Product Name: Substrate Reagent Pack

Reviewed on: 24 July 2018

electrostatic charge.

- **Conditions for safe storage:** Store in a cool place. Keep container tightly closed in a dry, well ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

8. Exposure Controls and Personal Protection:

- **Component:** Tetramethylbenzidine – Not an occupational hazard at these levels.
- **Component:** Proprietary Buffer with N,N-Dimethylformamide (DMF)
UK EH40 WEL – Workplace Exposure Limits: Value: STEL, 20 ppm, 61 mg/m³. **Value:** TWA, 10 ppm, 30 mg/m³. Can be absorbed through skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.
- **Appropriate engineering controls:** Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.
- **Individual protection measures:** Wash hands thoroughly after handling chemical products and before eating, smoking or using the restroom. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing.

Eye/face protection: Wear approved safety goggles.

Skin/hand protection: Handle with protective gloves, plastic or rubber. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body protection: Wear suitable protective clothing according to the concentration and amount of the substance at the workplace.

Respiratory protection: In case of inadequate ventilation, use a suitable respirator. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

9. Physical and Chemical Properties:

- **Appearance:** Liquid
- **Upper/lower flammability or explosive limits:** Not available
- **Odor:** Not available
- **Odor:** Not available
- **Odor threshold:** Not available
- **pH:** Not available
- **Melting point/freezing point:** Not available.
- **Partition coefficient: noctanol/water:** Not available
- **Flash point:** Not available
- **Water solubility:** Not available
- **Evaporation rate:** Not available
- **Upper/lower flammability or explosive limits:** Not available
- **Vapor density:** Not available
- **Vapor density :** Not available
- **Vapor pressure:** Not available
- **Relative density:** Not available
- **Boiling point/Boiling range:** Not available
- **Auto igniting:** Not available
- **Decomposition temperature:** Not available
- **Viscosity:** Not available
- **Flammability (solid, gas):** Not available

10. Stability and Reactivity:

- **Reactivity:** No data available.
- **Chemical Stability:** No data available.
- **Possibility of hazardous reactions:** No data available.

Rev 0

biotechne®

Page 3 of 5

Product Name: Substrate Reagent Pack

Reviewed on: 24 July 2018

- **Conditions to avoid:** Heat, flames, sparks.
- **Incompatible materials:** Strong oxidizing agents.
- **Hazardous decomposition products:** No data available.

11. Toxicological Information:

- **Acute toxicity:** No data available.
- **Skin corrosion/irritation:** No data available.
- **Serious eye damage/irritation:** No data available.
- **Respiratory or skin sensitization:** No data available.
- **Germ cell mutagenicity:** Genotoxicity in vitro – mouse – lymphocyte, Mutation in mammalian somatic cells.
- **Carcinogenicity:** Not classified to its carcinogenicity based on its IARC, ACGIH, NTP or EPA classification at levels less than 0.1%.
- **Reproductive toxicity:** May cause congenital malformation in the fetus. Presumed human reproductive toxicant.
- **Specific target organ toxicity (STOT) -single exposure:** No data available.
- **Specific target organ toxicity (STOT) -repeated exposure:** No data available.
- **Aspiration hazard:** No data available.
- **Information on likely routes of exposure:** Routes of entry anticipated; oral, dermal, inhalation.
- **Symptoms related to the physical, chemical and toxicological characteristics:**
 - Inhalation:** Toxic if inhaled. May cause respiratory tract irritation.
 - Ingestion:** May be harmful if swallowed.
 - Skin contact:** May be harmful if absorbed through skin. May cause skin irritation.
 - Eye contact:** Causes serious eye irritation.
- **Delayed and immediate effects and also chronic effects from short and long term exposure:** No data available.

12. Ecological Information:

- **Ecotoxicity:** No data available.
- **Biodegradability:** No data available.
- **Bio accumulative potential:** No data available.
- **Mobility in soil:** No data available.
- **Other adverse effects:** No data available.

13. Disposal Considerations:

- **Disposal methods:** Dispose of waste in accordance to applicable national, regional, or local regulations. Contact a licensed professional waste disposal service to dispose of this material.
- **Contaminated packaging:** Dispose in the same manner as unused product.

14. Transportation Information:

- **UN Number:** None
- **DOT regulations:** · **Hazard class:** None
- **Land transport ADR/RID (cross-border):** Not regulated.
- **Maritime transport IMDG:** Not regulated.
- **Marine pollutant:** No
- **Air transport ICAO-TI and IATA-DGR:** Not regulated.
- **Transport/Additional information:** Not dangerous according to the above specifications.

15. Regulations:

Product Name: Substrate Reagent Pack

Reviewed on: 24 July 2018

▪ **US Federal and State Regulations**

TSCA (Toxic Substances Control Act): Proprietary Buffer Mixture and Tetramethylbenzidine are listed.

SARA 313: Proprietary Buffer is listed.

SARA 311/312 Hazards: Acute Health Hazard

CERCLA Reportable Quantity: None of the components are listed.

California Proposition 65: None of the components are listed on California's listing of known or potential carcinogens.

16. Other Information:

- **Notice to reader:** To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.