MSD GOLD Read Buffer, Read Buffer T (2X) and PQ Negative Control
Safety Data Sheet
According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations
Revision Date: 28Nov2018

SECTION 1: IDENTIFICATION
1.1. Product Identifier
Product Name: MSD GOLD Read Buffer, Read Buffer T (2X) and PQ Negative Control
Product Code: R92TG, R92TF, 3-3011-020017

1.2. Intended Use of the Product
Laboratory chemicals

1.3. Name, Address, and Telephone of the Responsible Party
Company
Meso Scale Diagnostics, LLC.
1601 Research Blvd
Rockville, MD 20850-3128
T 240-314-2600

1.4. Emergency Telephone Number
Emergency Number : Within the U.S. and Canada (24 hours, toll-free)
   CHEMTREC: 1-800-424-9300
   International (Hours of operation: Monday – Friday, 1230 – 2130 UTC or 0830 – 1730 ET)
   MSD direct dial: +1-240-314-2799

SECTION 2: HAZARDS IDENTIFICATION
2.1. Classification of the Substance or Mixture
GHS-US classification
Flam. Liq. 4   H227
Skin Irrit. 2   H315
Eye Dam. 1    H318
Full text of H-phrases: see section 16

2.2. Label Elements
GHS-US Labeling
Hazard Pictograms (GHS-US) :

Signal Word (GHS-US) : Danger
Hazard Statements (GHS-US) :
   H227 - Combustible liquid.
   H315 - Causes skin irritation.
   H318 - Causes serious eye damage.

Precautionary Statements (GHS-US) :
P210 - Keep away from extremely high or low temperatures, ignition sources, and incompatible materials. No smoking.
P264 - Wash hands, forearms, and other exposed areas thoroughly after handling.
P280 - Wear protective gloves, protective clothing, and eye protection.
P302+P352 - If on skin: Wash with plenty of water.
P332+P313 - If skin irritation occurs: Get medical advice/attention.
P362+P364 - Take off contaminated clothing and wash before reuse.
P305+P351+P338 - If in eyes: Remove contact lenses if possible, and rinse cautiously with water for several minutes then seek immediate medical assistance.
P321 - Specific treatment (see section 4 on this SDS).
P370+P378 - In case of fire: Use appropriate media (see section 5) to extinguish.
P403+P235 - Store in a well-ventilated place. Keep cool.
2.3. Other Hazards
May be corrosive to respiratory tract.

2.4. Unknown Acute Toxicity (GHS-US) No data available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>Product Identifier</th>
<th>% (w/w)</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,3-Propanediol, 2-amino-2-(hydroxymethyl)-, hydrochloride</td>
<td>(CAS No) 1185-53-1</td>
<td>5 - 10</td>
<td>Skin Irrit. 2, H315  Eye Irrit. 2A, H319  STOT SE 3, H335</td>
</tr>
<tr>
<td>Tripropylamine</td>
<td>(CAS No) 102-69-2</td>
<td>1 - 5</td>
<td>Flam. Liqu. 3, H226  Acute Tox. 3 (Oral), H301  Acute Tox. 3 (Dermal), H311  Acute Tox. 4 (Inhalation:dust,mist), H332  Skin Corr. 1B, H314  Eye Dam. 1, H318  STOT SE 3, H335  Aquatic Acute 3, H402  Aquatic Chronic 3, H412</td>
</tr>
<tr>
<td>Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-</td>
<td>(CAS No) 9002-93-1</td>
<td>0.1 - 0.5</td>
<td>Acute Tox. 4 (Oral), H302  Skin Irrit. 2, H315  Eye Dam. 1, H318  Aquatic Acute 2, H401  Aquatic Chronic 2, H411</td>
</tr>
</tbody>
</table>

Full text of H-phrases: see section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of First Aid Measures
General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
Inhalation: When symptoms occur: go into open air and ventilate suspected area. Obtain medical attention if breathing difficulty persists.
Skin Contact: Remove contaminated clothing. Immediately flush skin with plenty of water. Wash contaminated clothing before reuse. Seek medical attention if irritation occurs.
Eye Contact: Rinse cautiously with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical attention immediately.
Ingestion: Rinse mouth. Do NOT induce vomiting. Obtain medical attention if you feel unwell.

4.2. Most Important Symptoms and Effects Both Acute and Delayed
General: Causes serious eye damage.
Inhalation: May be corrosive to the respiratory tract.
Skin Contact: Causes skin irritation.
Eye Contact: Causes permanent damage to the cornea, iris, or conjunctiva.
Ingestion: May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.
Chronic Symptoms: Not available

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed
If exposed or concerned, get medical advice and attention. If medical advice is needed, have product container or label at hand.

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing Media
Suitable Extinguishing Media: Dry chemical powder, alcohol-resistant foam, carbon dioxide (CO₂).
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Unsuitable Extinguishing Media: Do not use a heavy water stream. A heavy water stream may spread burning liquid.

5.2. Special Hazards Arising From the Substance or Mixture
Fire Hazard: Combustible liquid.
Explosion Hazard: May form flammable or explosive vapor-air mixture.
Reactivity: Reacts violently with strong oxidizers. Increased risk of fire or explosion.

5.3. Advice for Firefighters
Precautionary Measures Fire: Exercise caution when fighting any chemical fire.
Firefighting Instructions: Use water spray or fog for cooling exposed containers. In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.
Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Reference to Other Sections
Refer to section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures
General Measures: Do not get in eyes, on skin, or on clothing. Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking. Do not breathe vapor, mist or spray.

6.1.1. For Non-Emergency Personnel
Protective Equipment: Use appropriate personal protection equipment (PPE).
Emergency Procedures: Evacuate unnecessary personnel. Stop leak if safe to do so.

6.1.2. For Emergency Personnel
Protective Equipment: Equip cleanup crew with proper protection.
Emergency Procedures: Ventilate area. Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit. Eliminate ignition sources.

6.2. Environmental Precautions
Prevent entry to sewers and public waters.

6.3. Methods and Material for Containment and Cleaning Up
For Containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. As an immediate precautionary measure, isolate spill or leak area in all directions.
Methods for Cleaning Up: Clean up spills immediately and dispose of waste safely. Transfer spilled material to a suitable container for disposal. Contact competent authorities after a spill. Absorb and/or contain spill with inert material. Do not take up in combustible material such as: saw dust or cellulosic material. Use only non-sparking tools. Cautiously neutralize spilled liquid.

6.4. Reference to Other Sections
See Section 8, Exposure Controls and Personal Protection. See Section 13, Disposal Considerations.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for Safe Handling
Additional Hazards When Processed: Handle empty containers with care because residual vapors may be flammable. May release corrosive vapors.
Precautions for Safe Handling: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Handle empty containers with care because they may still present a hazard. Do not get in eyes, on skin, or on clothing. Do not breathe dust/fume/gas/mist/vapors/spray.
Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures.

7.2. Conditions for Safe Storage, Including Any Incompatibilities
Technical Measures: Comply with applicable regulations.
Storage Conditions: Store in a dry, cool place. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials. Store in a well-ventilated place. Keep container tightly closed. Keep in fireproof place. Store in original container or corrosive resistant and/or lined container.
Incompatible Materials: Strong acids, strong bases, strong oxidizers.

7.3. Specific End Use(s)
Laboratory chemicals
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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control Parameters
For substances listed in section 3 that are not listed here, there are no established Exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), AIHA (WEEL), NIOSH (REL), OSHA (PEL), Canadian provincial governments, or the Mexican government.

8.2. Exposure Controls
Appropriate Engineering Controls: Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed. Gas detectors should be used when flammable gases or vapors may be released.


Materials for Protective Clothing: Chemically resistant materials and fabrics. Wear liquid resistant clothing.

Hand Protection: Wear protective gloves.

Eye Protection: Chemical goggles or face shield.

Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn. In case of inadequate ventilation, oxygen deficient atmosphere, or where exposure levels are not known wear approved respiratory protection.

Other Information: When using, do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Liquid</td>
</tr>
<tr>
<td>Appearance</td>
<td>Clear to yellow liquid</td>
</tr>
<tr>
<td>Odor</td>
<td>Amine-like</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>Not available</td>
</tr>
<tr>
<td>pH</td>
<td>7.3 - 8</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Not available</td>
</tr>
<tr>
<td>Melting Point</td>
<td>Not available</td>
</tr>
<tr>
<td>Freezing Point</td>
<td>Not available</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>Not available</td>
</tr>
<tr>
<td>Flash Point</td>
<td>&gt; 60°C (140°F)</td>
</tr>
<tr>
<td>Auto-ignition Temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not available</td>
</tr>
<tr>
<td>Lower Flammable Limit</td>
<td>Not available</td>
</tr>
<tr>
<td>Upper Flammable Limit</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Not available</td>
</tr>
<tr>
<td>Relative Vapor Density at 20 °C</td>
<td>Not available</td>
</tr>
<tr>
<td>Relative Density</td>
<td>1.009 - 1.06</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.009 - 1.06</td>
</tr>
<tr>
<td>Solubility</td>
<td>Miscible with water.</td>
</tr>
<tr>
<td>Partition Coefficient: N-Octanol/Water</td>
<td>Not available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not available</td>
</tr>
<tr>
<td>Explosion Data – Sensitivity to Mechanical Impact</td>
<td>Not expected to present an explosion hazard due to mechanical impact.</td>
</tr>
<tr>
<td>Explosion Data – Sensitivity to Static Discharge</td>
<td>Static discharge not expected to act as an ignition source.</td>
</tr>
</tbody>
</table>
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SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity: Reacts violently with strong oxidizers. May produce toxic vapors upon reaction with bleach. Increased risk of fire or explosion.

10.2. Chemical Stability: Stable under recommended handling and storage conditions (see section 7).

10.3. Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

10.4. Conditions to Avoid: Direct sunlight, extremely high or low temperatures, heat, hot surfaces, sparks, open flames, incompatible materials, and other ignition sources.

10.5. Incompatible Materials: Strong acids, strong bases, strong oxidizers.


SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on Toxicological Effects - Product

Acute Toxicity: Not considered acutely toxic.

LD50 and LC50 Data:

<table>
<thead>
<tr>
<th>Read Buffer and Free Tag</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ATE US (oral)</td>
<td>2667 mg/kg body weight</td>
</tr>
</tbody>
</table>

Skin Corrosion/Irritation: May cause skin irritation.

Serious Eye Damage/Irritation: Causes serious eye damage. pH: 7.3 - 8

Respiratory or Skin Sensitization: Not classified

Germ Cell Mutagenicity: Not classified

Teratogenicity: Not available

Carcinogenicity: Not classified

Specific Target Organ Toxicity (Repeated Exposure): Not classified

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Single Exposure): Not classified

Aspiration Hazard: Not classified

Symptoms/Injuries After Inhalation: May be corrosive to the respiratory tract.

Symptoms/Injuries After Skin Contact: May cause skin irritation.

Symptoms/Injuries After Eye Contact: Causes permanent damage to the cornea, iris, or conjunctiva.

Symptoms/Injuries After Ingestion: May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.

11.2. Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

<table>
<thead>
<tr>
<th>Tripropylamine (102-69-2)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 Oral Rat</td>
<td>96 mg/kg</td>
</tr>
<tr>
<td>LD50 Dermal Rat</td>
<td>430 mg/kg</td>
</tr>
<tr>
<td>LC50 Inhalation Rat</td>
<td>5100 mg/m³ (Exposure time: 4 h)</td>
</tr>
<tr>
<td>LC50 Inhalation Rat</td>
<td>1.125 mg/l/4h</td>
</tr>
<tr>
<td>Poly(oxy-1,2-ethanediyl), .alpha.-[4-{1,1,3,3-tetramethylbutyl}phenyl]-.omega.-hydroxy- (9002-93-1)</td>
<td></td>
</tr>
<tr>
<td>LD50 Oral Rat</td>
<td>1800 mg/kg</td>
</tr>
</tbody>
</table>

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecology - General: Not classified.

Tripropylamine (102-69-2)

<table>
<thead>
<tr>
<th>LC50 Fish 1</th>
<th>45.6 - 56.7 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poly(oxy-1,2-ethanediyl), .alpha.-[4-{1,1,3,3-tetramethylbutyl}phenyl]-.omega.-hydroxy- (9002-93-1)</td>
<td></td>
</tr>
<tr>
<td>LC50 Fish 1</td>
<td>3 mg/l</td>
</tr>
</tbody>
</table>

12.2. Persistence and Degradability

Read Buffer and Free Tag

Persistence and Degradability: Not established.

12.3. Bioaccumulative Potential

Read Buffer and Free Tag

Bioaccumulative Potential: Not established.
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<table>
<thead>
<tr>
<th>Section</th>
<th>Hazard Class</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.4.</td>
<td>Mobility in Soil</td>
<td>Not available</td>
</tr>
<tr>
<td>12.5.</td>
<td>Other Adverse Effects</td>
<td>Not available</td>
</tr>
</tbody>
</table>

**SECTION 13: DISPOSAL CONSIDERATIONS**

13.1. Waste treatment methods
Waste Disposal Recommendations: Dispose of contents/container in accordance with local, regional, national, and international regulations.
Additional Information: Handle empty containers with care because residual vapors may be flammable.

**SECTION 14: TRANSPORT INFORMATION**

14.1. In Accordance with DOT | Not regulated for transport
14.2. In Accordance with IMDG | Not regulated for transport
14.3. In Accordance with IATA | Not regulated for transport
14.4. In Accordance with TDG | Not regulated for transport

**SECTION 15: REGULATORY INFORMATION**

15.1. US Federal Regulations
Read Buffer and Free Tag
SARA Section 311/312 Hazard Classes | Flammable liquid
| Skin irritation
| Serious eye damage

**Tripropylamine (102-69-2)**
Listed on the United States TSCA (Toxic Substances Control Act) inventory

1,3-Propanediol, 2-amino-2-(hydroxymethyl)-, hydrochloride (1185-53-1)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl].omega.-hydroxy- (9002-93-1)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

SARA Section 311/312 Hazard Classes | Immediate (acute) health hazard

15.2. US State Regulations
Tripropylamine (102-69-2)
U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

15.3. Canadian Regulations
Tripropylamine (102-69-2)
Listed on the Canadian NDSL (Non-Domestic Substances List)
Listed on the Canadian IDL (Ingredient Disclosure List)
IDL Concentration 1 %

1,3-Propanediol, 2-amino-2-(hydroxymethyl)-, hydrochloride (1185-53-1)
Listed on the Canadian DSL (Domestic Substances List)

Potassium chloride (7447-40-7)
Listed on the Canadian DSL (Domestic Substances List)

Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl].omega.-hydroxy- (9002-93-1)
Listed on the Canadian DSL (Domestic Substances List)
Listed on the Canadian IDL (Ingredient Disclosure List)
IDL Concentration 1 %

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by CPR.
### MSD GOLD Read Buffer, Read Buffer T (2X) and PQ Negative Control

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#### SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

<table>
<thead>
<tr>
<th>Revision Date</th>
<th>28Nov2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other Information</td>
<td>This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.</td>
</tr>
</tbody>
</table>

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**GHS Full Text Phrases:**

<table>
<thead>
<tr>
<th>Acute Tox. 3 (Dermal)</th>
<th>Acute toxicity (dermal) Category 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Tox. 3 (Oral)</td>
<td>Acute toxicity (oral) Category 3</td>
</tr>
<tr>
<td>Acute Tox. 4 (Inhalation:dust,mist)</td>
<td>Acute toxicity (inhalation:dust,mist) Category 4</td>
</tr>
<tr>
<td>Acute Tox. 4 (Oral)</td>
<td>Acute toxicity (oral) Category 4</td>
</tr>
<tr>
<td>Aquatic Acute 2</td>
<td>Hazardous to the aquatic environment - Acute Hazard Category 2</td>
</tr>
<tr>
<td>Aquatic Acute 3</td>
<td>Hazardous to the aquatic environment - Acute Hazard Category 3</td>
</tr>
<tr>
<td>Aquatic Chronic 2</td>
<td>Hazardous to the aquatic environment - Chronic Hazard Category 2</td>
</tr>
<tr>
<td>Aquatic Chronic 3</td>
<td>Hazardous to the aquatic environment - Chronic Hazard Category 3</td>
</tr>
<tr>
<td>Eye Dam. 1</td>
<td>Serious eye damage/eye irritation Category 1</td>
</tr>
<tr>
<td>Eye Irrit. 2A</td>
<td>Serious eye damage/eye irritation Category 2A</td>
</tr>
<tr>
<td>Flam. Liq. 3</td>
<td>Flammable liquids Category 3</td>
</tr>
<tr>
<td>Skin Corr. 1B</td>
<td>Skin corrosion/irritation Category 1B</td>
</tr>
<tr>
<td>Skin Irrit. 2</td>
<td>Skin corrosion/irritation Category 2</td>
</tr>
<tr>
<td>STOT SE 3</td>
<td>Specific target organ toxicity (single exposure) Category 3</td>
</tr>
<tr>
<td>H226</td>
<td>Flammable liquid and vapor</td>
</tr>
<tr>
<td>H227</td>
<td>Combustible liquid</td>
</tr>
<tr>
<td>H301</td>
<td>Toxic if swallowed</td>
</tr>
<tr>
<td>H302</td>
<td>Harmful if swallowed</td>
</tr>
<tr>
<td>H311</td>
<td>Toxic in contact with skin</td>
</tr>
<tr>
<td>H314</td>
<td>Causes severe skin burns and eye damage</td>
</tr>
<tr>
<td>H315</td>
<td>Causes skin irritation</td>
</tr>
<tr>
<td>H318</td>
<td>Causes serious eye damage</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation</td>
</tr>
<tr>
<td>H332</td>
<td>Harmful if inhaled</td>
</tr>
<tr>
<td>H335</td>
<td>May cause respiratory irritation</td>
</tr>
<tr>
<td>H401</td>
<td>Toxic to aquatic life</td>
</tr>
<tr>
<td>H402</td>
<td>Harmful to aquatic life</td>
</tr>
<tr>
<td>H411</td>
<td>Toxic to aquatic life with long lasting effects</td>
</tr>
<tr>
<td>H412</td>
<td>Harmful to aquatic life with long lasting effects</td>
</tr>
</tbody>
</table>

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**Party Responsible for the Preparation of This Document**

Meso Scale Diagnostics T 240-314-2600

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*

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28Nov2018 EN (English US)